CHAPTER XIV

The Transfer

As war moved closer, as larger and larger construction tasks loomed ahead, the old problem of responsibility called out for final solution. During 1941 two competing organizations shared the work—one, an element of the Quartermaster Corps, the other, the Corps of Engineers. Although measurably strengthened and to some extent decentralized by Somervell, the Construction Division still exhibited weaknesses resulting from twenty years of scanty budgets and from its position in a multifunctioned supply service. Whether it could withstand increased wartime pressures was uncertain. The Corps of Engineers, a technical branch, specializing in construction and maintaining a large, smooth-running field organization, participated in the military program to a limited extent and, mostly, on a temporary basis. Unless the Corps' emergency construction assignment was continued and enlarged, the Engineer Department would face stagnation and partial dissolution. Patterson's dissatisfaction with the existing arrangement, Schley's concern over the future of his Corps, Somervell's personal ambitions, alleged Quartermaster shortcomings, and Engineer successes—these were among the factors which influenced settlement of the long-standing controversy and brought all military construction under the Corps of Engineers.

A Test for the Engineers

What were the Engineers' qualifications? Where was proof they could do the job? Over the years opponents of a transfer had raised these questions again and again. Embracing fortifications, rivers and harbors improvements, flood control projects, roads, railroads, dams, and canals, the Corps' experience in heavy construction was unequaled by that of any other engineering outfit in the world. But, as its adversaries emphasized, the Corps had little acquaintance with the type of structural work supervised by The Quartermaster General. In fact, the Engineers claimed no special competence in the housing and building fields. Confidence in their organization, in its strength and versatility, explained their willingness to tackle all military construction. The Air Corps program, transferred in November 1940, provided a practical test of the Engineer Department, an opportunity to show what it could do with an unfamiliar and challenging assignment.

"When we took over the air force construction from the Quartermaster, it was just simple chaos," General Plank afterward declared, "and there is nothing that anybody can say by way of rationalization that will change the posture of it from chaos." To Plank, then a major with 20 years' service in the Corps of

Engineers, the confusion was virtually complete. No one appeared to know just how many projects were on the books or how much money had been spent. Procedures followed in selecting sites and preparing layouts seemed "cockeyed and crazy." Washington made decisions which only the field could properly make. No firm guidelines existed for use in designing runways to bear the weight of new and heavier planes. Camouflage and dispersion had received little attention. One encountered critical delays at almost every turn. The situation, in Plank's opinion, "was not alone the fault of the Construction Quartermaster as an engineer outfit, but it was the easy way in which they had worked with the air force."[1] Working with the Air Corps was to be a good deal harder than he anticipated.

Plank, whose position in the Air Corps program corresponded roughly to that of Groves in the larger, more difficult Quartermaster effort, had to start from scratch to build an organization. Because his program was smaller and the work more decentralized, he did not require anywhere near as large a staff as Groves. In the beginning, he had only one secretary and the part-time assistance of Carter Page and Wallace R. Vawter, two of Robins' ablest civil engineers. Almost immediately, the section expanded to 7 or 8 persons, and by April 1941 it had nearly 40. As unit heads, Plank was able to obtain Page, Vawter, and 4 others, 2 civilians and 2 Engineer Reservists. (*Chart 14*) To be his executive, he chose Capt. John L. Person, a graduate of West Point and MIT who had a fine record as an Engineer Regular. Major Hannis, Robins' liaison officer with the Air Corps, also reported to Plank. Over a period of about six months, the organization grew to approximately 100 persons, or about one-fifth the size of Groves' Operations Branch.[2] Meanwhile, under the direction of Robins and Hardin, Plank was trying to bring order out of what he regarded as chaos.

Decentralization was to be the first step. As far back as the spring of 1939, General Schley had made it known that if he assumed responsibility for airfield construction, he would delegate much of his authority to the Engineer field. At that time he said:

> The existing organization of the Engineer Department would be used without material change. The detailed engineering design and all construction would be handled through Division and District Engineers. . . . To get the results required, these organizations must be allowed to handle, with as few restrictions as possible, all engineering design, preparation of construction drawings and specifications, procurement, contracting, accounting, and disbursement.[3]

When he took over the Air Corps program in late 1940, he went into action. The field had long enjoyed considerable freedom in awarding advertised contracts and approving plans and specifications for civil works and fortifications.[4] In December 1940, Schley extended this same procedure to the newly acquired air projects. A short time later, he gave division engineers authority to approve negotiated contracts in amounts up to $500,000 and district engineers, in amounts up to $100,000. General Robins

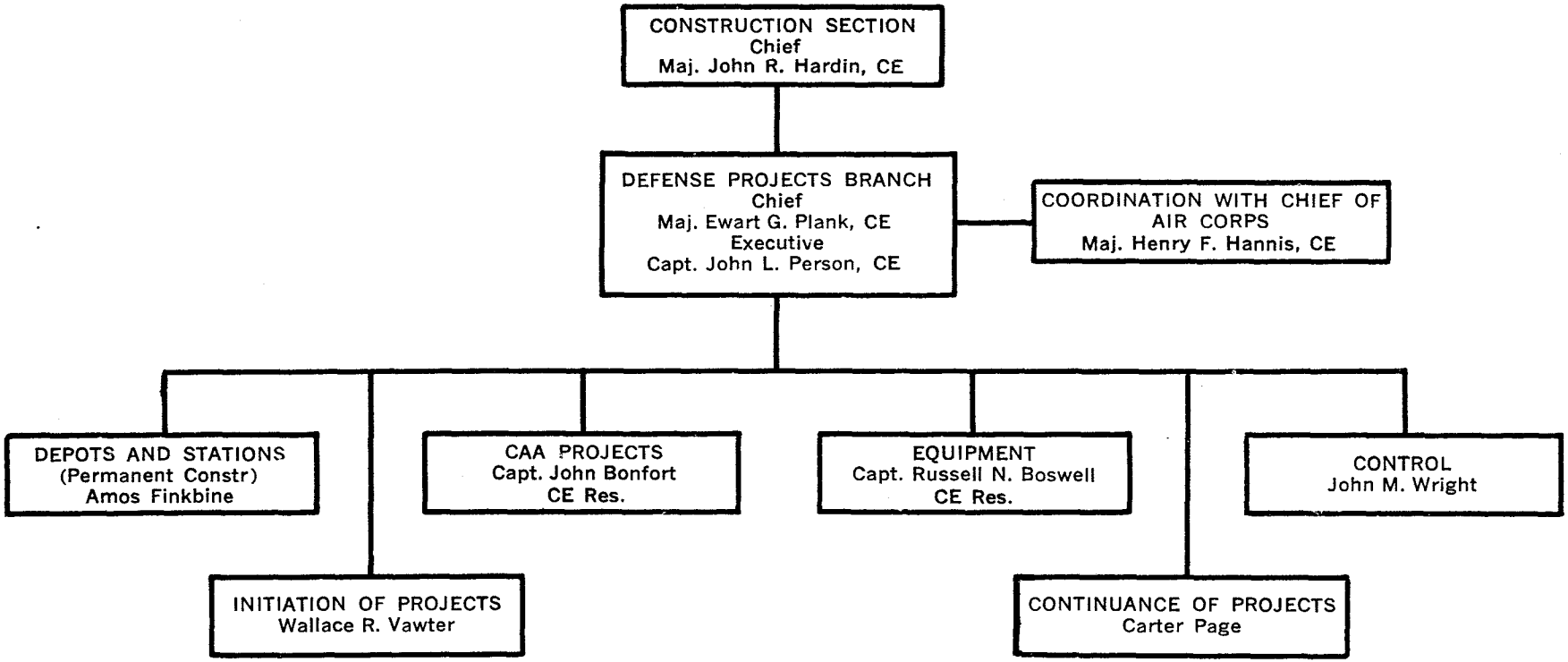
[1] Interv with Maj. Gen. Ewart G. Plank, 5 Dec 50.

[2] (1) *Ibid.* (2) Rpt, Activities of the Constr Div, Jul 40–Jul 41, p. 126.

[3] Memo, Schley for Tyner, 10 Apr 39. G–4/31324.

[4] See p. 268, above.

CHART 14—ORGANIZATION OF DEFENSE PROJECTS BRANCH, CONSTRUCTION SECTION, OCE, APRIL 1941



Source: OCE, Orgn Chart, 26 Apr 41.

would select contractors for negotiated agreements amounting to $500,000 or more from among firms nominated by the field. Although bound by War Department policy in matters of structural design, Schley made the districts fully responsible for water supply and sanitation. He wished to give the field still greater powers, but further decentralization had to await changes in War Department policy and in Air Corps organization.[5]

Quickly and firmly, the Engineer field took hold, applying to Air Corps work methods which over the years had proved successful on rivers and harbors construction. The Engineers' cost accounting system, the oldest in the government and possibly the best, went into effect at air projects. District purchasing departments, familiar with local markets and materialmen, assisted contractors in procuring scarce supplies. District labor relations officers continued the long-established practice of settling local disputes locally. District disbursing officers took over work previously handled with indifferent success by regional finance offices.[6] In placing construction under contract, the districts set a remarkably rapid pace. To cite one example, the Los Angeles District received a large sheaf of Quartermaster drawings for the new Tucson airport on 15 December; by the 24th it had reviewed, revised, and retraced the plans, prepared specifications, and readied the job for advertising. Congratulated by Colonel Tompkins on this and similar feats, Lt. Col. Edwin C. Kelton, the district engineer, replied: "The real answer to our ability to turn out plans and specifications consists of the fact that we are just plain 'damn good.'" Then, in a more serious vein, he added: "I was fortunate in having a large organization of highly trained men with qualifications to handle almost any type of construction. This of course was the secret of being able to get started early on these jobs."[7] The Corps' civil organization was proving its worth on military projects.

There were problems aplenty—of a kind the Engineer field was powerless to prevent. The most exasperating difficulties were traceable to the Air Corps' Colonel Kennedy and his Buildings and Grounds Division. In 1940 and early 1941 the method of site selection in vogue with the Air Corps was to accept tracts donated by various communities. "How old do you have to be," Plank asked, "to know what kind of land you get under those circumstances?"[8] Moreover, Kennedy, with only a small staff to advise him, had set himself up as an arbiter in engineering matters. In choosing sites he consulted construction officers seemingly as the whim prompted. He insisted on preparing all air station layouts in his Washington office. He also dabbled in design; at the time of the airfield transfer, he was pressing for adoption of soil cement, a mixture of cement and natural soil which formed a weak concrete, as a standard paving

[5] (1) Bruner, Outline of Authorizations—Constr Contracts, I, 1–3; IV, 2; VI, 1–2. (2) OCE Circ Ltrs R&H 64, 6 Dec 40; Finance 226, 9 Dec 40; Finance 41, 19 Feb 41; R&H 67, 16 Dec 40; and R&H 71, 23 Dec 40.

[6] (1) OCE Circ Ltrs Finance 224–227, 9 Dec 40; Finance 230, 11 Dec 40. (2) 1st Ind, 7 Dec 40, on Ltr, NAD to Dist Engr Providence, R. I., 3 Dec 40. 686 (Airfields) Part 1. (3) Incl with Memo, Mitchell for Styer, 6 Dec 41. LRBr Files.

[7] Ltr, Kelton to Tompkins, 29 Mar 41. 686 (Airfields) Part 1.

[8] Plank Interv, 5 Dec 50.

material for runways. Other headaches that plagued the Engineer field were attributable not to Kennedy's notions but to the inability of the Quartermaster Corps to furnish basic engineering data necessary for proper design. Among the masses of Quartermaster blueprints, drawings, specifications, manuals, and bulletins turned over to the districts and divisions, there were no criteria for designing paved runways and few plans for Air Corps technical buildings. And there was not much information on airfield drainage or passive defense. Somervell had promised to help make up these deficiencies, but he was slow in doing so.[9]

Illustrative of the troubles facing district engineers were situations at two projects transferred to the Corps on 2 January 1941: Brookley Field at Mobile, Alabama, and Key Field at Meridian, Mississippi. Brookley, also known as the Southeast Air Depot, occupied a 1,350-acre site just south of the city on Mobile Bay. Part of the tract, comprising a small municipal airport, was a donation; additional land, costing more than $500,000, had been acquired by Colonel Valliant. Started late in 1939, work at Brookley had been painfully slow. When the Mobile District Engineer, Lt. Col. Willis E. Teale, took over the project, he saw why. The ground water level was from 1 to 4 feet below the surface. The plasticity index of the soil varied from zero to 20 percent and the liquid limit, from 16 to 35 percent. "Blue mud" or "gook," as some called the soggy subgrade, ran down to a depth of 20 feet. An elaborate drainage system, costing heaven knew how much, would be necessary before paving could go forward. Adding to Teale's worries was a dispute with Colonel Kennedy over the Brookley layout.[10] The district engineer at Vicksburg, Maj. Samuel D. Sturgis, Jr., received a rude jolt when he inspected his new project at Meridian. Key Field, the municipal airport selected by the Air Corps as the site for a tactical base, was on Okatibee Creek, which frequently overflowed and every two or three years inundated the area.[11] Sturgis saw that levees would be necessary to protect the air base. At Kennedy's insistence, runways were of soil cement. "A complete waste of money," Sturgis said. The impervious clay subgrade produced so weak a runway that the wheels of heavy planes "cut through it like a knife."[12] Stronger pavements of concrete or asphalt were mandatory.[13] Like other district engineers who found themselves in similar predicaments, Sturgis and Teale looked to the Chief for more sagacious planning of future Air Corps projects.

At the Munitions Building in Washington, the Chief's office was alive with activity as General Robins and his staff tried to do what was needful. Responsible not only for Air Corps construction but also for designing and building fields for the Civil Aeronautics Authority, Robins prepared his organization for a

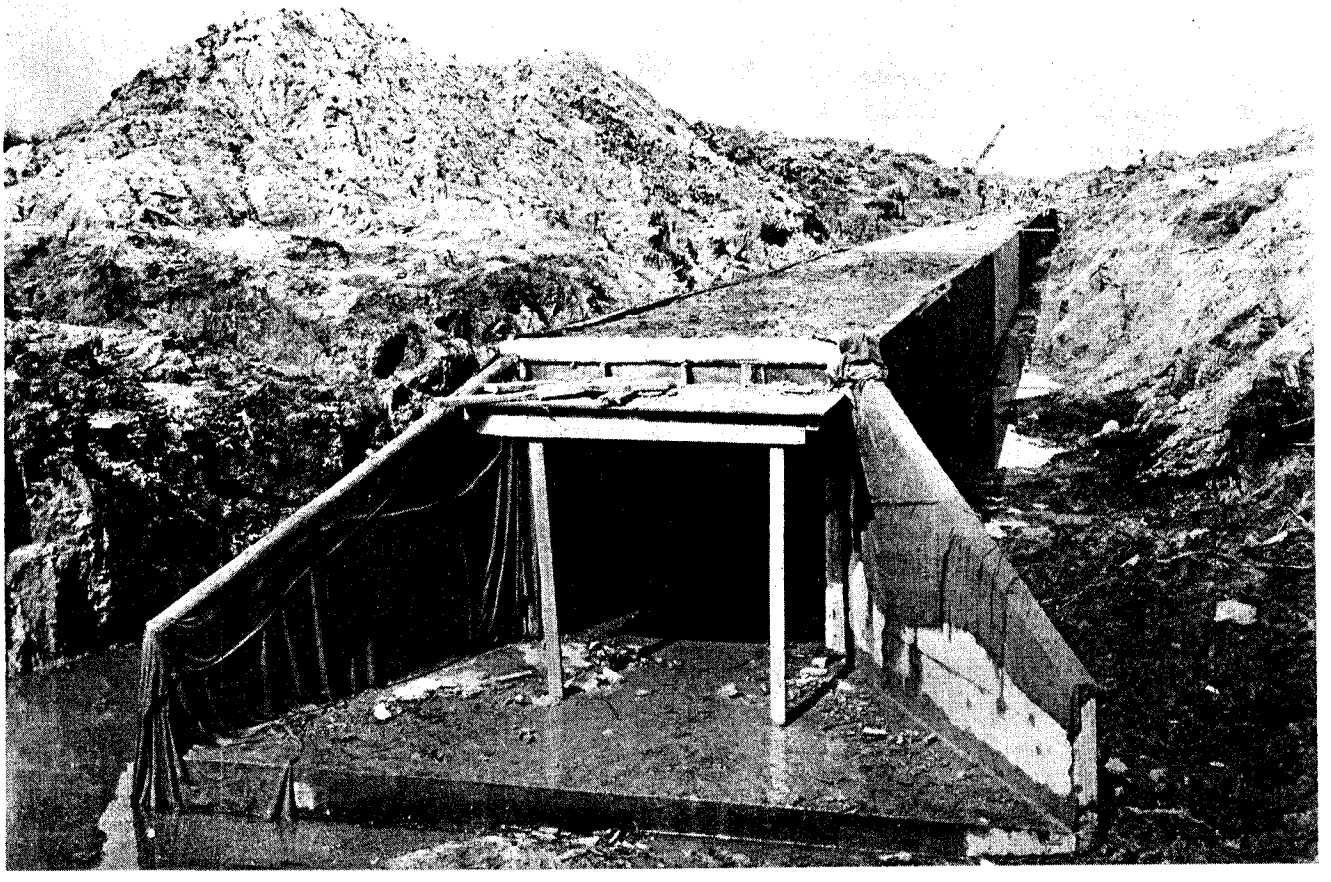
[9] (1) Ltr, Div Engr SPD to OCE, 19 Feb 41. 686 (Airfields) Part 6. (2) Ltr, Robins to Brett, 8 Feb 41. 686 (Airfields) Part 5. (3) Ltr, OCE to All Div Engrs, 12 Mar 41. 686 (Airfields) Part 7. (4) OCE Circ Ltr Constr 37, 14 Feb 41. (5) Ltr, Robins to Gregory, 9 Jan 41. 686 (Airfields) Part 3. (6) Ltr, Plank to Gregory, 17 Feb 41. 686 (Airfields) Part 5.

[10] (1) 686 (Brookley Fld) Part 1. (2) Ltr, Dist Engr Mobile, Ala., to Div Engr SAD, 23 Sep 43. 686.61 (Brookley Fld).

[11] Compl Rpt, Meridian Air Base, Oct 41, pp. 57–58, 68–69.

[12] Interv with Lt Gen Samuel D. Sturgis, Jr., 26 Sep 63.

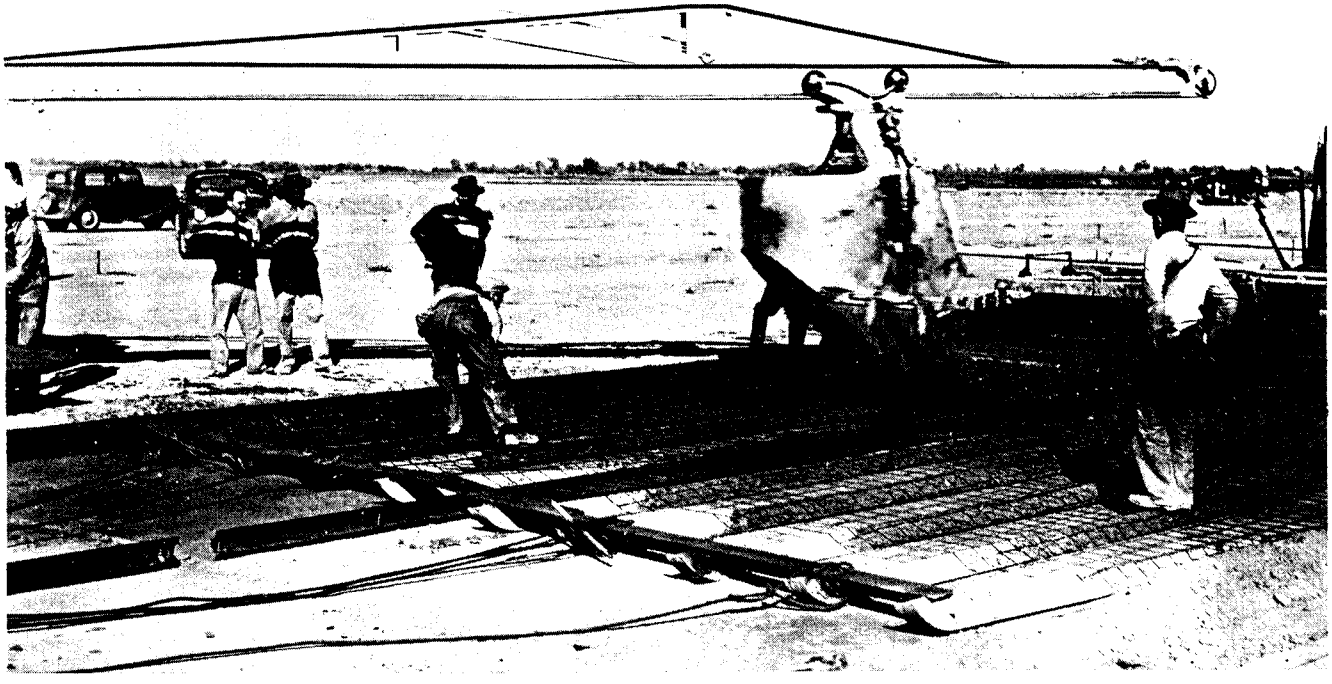
[13] 686 (Key Fld) Part 1.



CONCRETE DRAINAGE CULVERT AT BROOKLEY FIELD, ALABAMA

dominant role in American airport development. Soon a list of works on airfield design was making the rounds, and experts in river, harbor, and flood control work were boning up on the subject. In January seventy-five officers and civilian employees of the Corps began a 6-month course in airport engineering under Prof. Byron J. Lambert of the University of Iowa. William H. McAlpine, the 67-year-old chief civilian engineer, was a tower of strength. "Mr. Mac" went at the task of learning a new specialty with the vigor of someone half his age; he also brought in men experienced in utilities and airport work. Harold A. Kemp, chief of the Washington, D. C., Department of Sanitary Engineering, took charge of a new Airports Division in the Engineering Section; and Gayle McFadden, who had directed construction of La Guardia Field and the Washington National Airport, became Kemp's principal assistant. Knowing that engineering work was slack in some district offices, McAlpine made plans for farming out design jobs to them.[14] By February 1941 *American Aviation* was able to report: "The Corps of Engineers, it is understood, did not especially relish the idea of handling the airport program since it was, admittedly, not well in-

[14] (1) Manual, Engrg Sec OCE, Design of Airport Runways, Jan 41, pp. A1–A7. (2) *ENR*, March 13, 1941, p. 56. (3) Memo, Kemp for Bills, 28 Mar 41. McFadden Reading File.



PAVING RUNWAY, LOWRY FIELD, COLORADO, *October 1940.*

formed or equipped to do this specialized job. But the Corps is now actively at work increasing its knowledge and in a matter of months is expected to have things well in hand."[15]

Design standards for airfield pavements were a prime desideratum. Before the emergency, commercial planes of 25,000 pounds gross weight, having 12,500-pound wheel loads, were the heaviest in use. Runways, taxiways, and aprons to carry planes of this size posed no unusual engineering problems; accepted highway methods served well enough. During the thirties neither the Air Corps nor the Quartermaster Construction Division had shown much concern over pavement design. As late as 1939 the Air Corps had assumed that in the event of war all planes except heavily loaded bombers could operate from sod fields. Hence, the Construction Division had developed no detailed engineering criteria for paved runways.[16] In 1940, the Army had virtually no idea how to design for wheel loads exceeding 12,500 pounds. Yet bombers with wheel loads of 37,000 pounds were coming into use and far heavier ones were in prospect. Thus, the Engineers inherited, along with the Air Corps program, a complex and urgent technical problem. Continued development of the air arm would depend on their ability to design stronger pavements to take heavier planes.

Recognizing that district engineers needed help in planning runways and needed it fast, McAlpine got in touch

[15] *American Aviation*, February 15, 1941, p. 5.

[16] (1) Memo, OCofAC Plans Div for Arnold, 12 Aug 39. AAF 611 A. (2) 1st Ind, 8 Nov 39, on Ltr, OCE to TQMG, 30 Oct 39. 686 (Airfields) Part 1.

with leading experts in paving design and with the Civil Aeronautics Authority, the Public Roads Administration, the Portland Cement Association, and the Asphalt Institute. Using information they provided, he hastily compiled a manual, Design of Airport Runways, which he published in January 1941. The manual, which included sections on grading, drainage, and runway layout, devoted considerable space to various formulas developed by specialists in the design of rigid (concrete) and flexible (bituminous) pavements. Among the formulas for rigid types was one advanced by Prof. Harald M. Westergaard of Harvard University; Westergaard had developed it originally for highways but in 1940 had extended the principle to runways. Another, devised by Frank T. Sheets, president of the Portland Cement Association, was based on observations and measurements at the Bates Test Road in Illinois. The manual warned against using these formulas as "the necessary or sole basis for establishing the thickness of concrete slab in all cases." Similarly, it pointed out that successful use of formulas for flexible pavement design would require accurate measurement of the bearing capacity of the subsoil—a measurement for which there was as yet no standard yardstick. Sketchy and tentative, the manual was to serve as "a general guide in runway design and not as a source of specific instructions."[17]

Through tests and investigations, the Engineers sought to extend their knowledge. In late January 1941, the Waterways Experiment Station at Vicksburg, Mississippi, began studying general problems of airfield drainage, soil stabilization, and flexible pavement design. On 14 February, Colonel Tompkins asked the districts and divisions to try out low-cost paving materials on runways, taxiways, and aprons and to report their findings to him as soon as possible. A short time later, he directed the Norfolk District Engineer, Lt. Col. John F. Conklin, to experiment with circular metal plates as a means of determining the bearing capacity of soils under flexible pavements. At Langley Field and at the Williamsburg Test Road of the Virginia State Highway Department, Conklin was soon at work exerting pressures on a plate and then measuring the effect on the subgrade below it.[18] Conducting experiments and analyzing results took time. While all this research was in progress, the Engineers were exploring other aspects of airfield design.

At bases transferred from the Quartermaster Corps, an important safeguard was lacking. From the air, Westover Field near Chicopee, Massachusetts, stood out in bold relief from the surrounding countryside. Construction forces had denuded the land of vegetation; and all day long, clouds of dust rose from the reservation. The buildings, crowded into about one-third of the available space, stood in the close, regular formations that mark military posts. Westover was not unique. Other bases along the Atlantic, Gulf, and Pacific coasts were highly visible from the air—inviting targets to possible enemy attackers.[19]

[17] Design of Airport Runways, pp. 15, 32, 1, *passim*.

[18] (1) Ltr, WES to CofEngrs, 6 Feb 41. 686 (Airfields) Part 5. (2) OCE Circ Ltr Constr 37, 14 Feb 41; Constr 84, 6 May 41.

[19] (1) Memo, Engr Bd Camouflage Sec for Rcd, 29 Jul 41. 686 (Airfields) Part 26. (2) Memo, Burton for Robins, 5 Dec 40. 467 Part 1.

Efforts to remedy this situation began shortly after the Air Corps program went over to the Engineers. On 13 December 1940, General Robins advised the field: "Modern air attack technique, as demonstrated by European conditions, clearly indicates that concealment and camouflage of airfields . . . is of fundamental importance for those installations which are so located as to be in danger of aerial attack." He asked the districts and divisions to give especial weight to this factor in site selection, layout, and design.[20] Soon plans were under way for a comprehensive program of camouflage and concealment. On 19 February, the Acting Chief of Engineers, Brig. Gen. John J. Kingman, asked General Marshall to "issue instructions requiring that concealment be given fundamental consideration in selecting sites and laying out airfields" and to "require the immediate camouflage of airfields . . . in areas near the coastline."[21] In answer Marshall asked the Engineers what this program would cost. Their reply—$700,000 for planning alone—met with prolonged silence on the part of the General Staff.[22] Regretfully, Robins concluded "that the War Department apparently does not consider camouflage of fields important enough to justify the additional expense involved."[23] Subsequent appeals for money got nowhere. Without additional funds district engineers could attempt no dispersed layouts nor could they adopt any costly concealment measures. At most projects they could do little more than preserve vegetation.[24]

The one notable exception was Bradley Field near Windsor Locks, Connecticut. Late in December 1940, the district engineer at Providence, Lt. Col. John S. Bragdon, chose a site a few miles from Windsor Locks to replace an unsatisfactory one the Air Corps had previously selected at Hartford. Bragdon was enthusiastic. The new site was ideal for an airport: the ground was high and dry; the sandy soil was firm and easily drained; little grading was necessary; and there were unobstructed approaches from all directions.[25] He worked zealously on plans for the field. With Robins' help, he persuaded Colonel Kennedy to go along with a scheme for camouflage and dispersal, even though it meant extending utility lines at a cost of some $500,000. The General Staff at first held back, unwilling to spend the money. "However," Robins wrote, "approval was finally obtained on the basis that it was experimental."[26] Told to go ahead, Bragdon spared no effort to make Bradley invisible from the air. With advice from the Engineer Board, he blended the airfield into the landscape of the tobacco-farming Connecticut countryside. Inspecting the project in July 1941, an officer from the board noted: "The principle of dispersion is carried out to the nth degree." Describing the

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[20] Ltr, Robins to Div and Dist Engrs, 13 Dec 40. 467 Part 1.

[21] Memo, Kingman for Marshall, 19 Feb 41. 467.

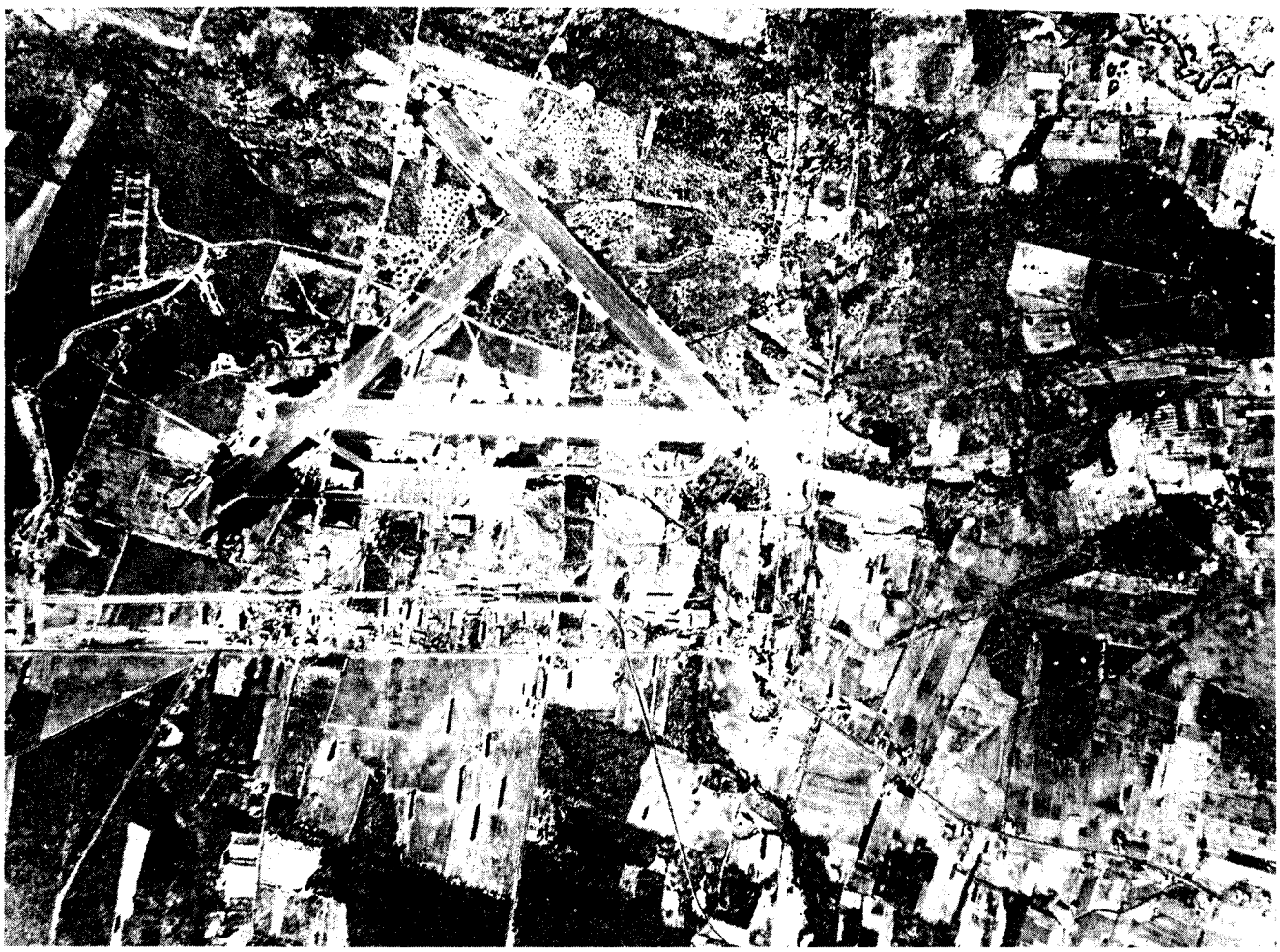
[22] WD Ltr AG 007.5 (2-19-41) M-D to the CofEngrs, 17 Mar 41, and Inds. 467 Part 3.

[23] 1st Ind, 7 Apr 41, on Ltr, Kingman to Robins, 22 Mar 41. 467 Part 1.

[24] (1) Ltr, OCE to TAG, 3 Oct 41. 618.33 (Airfields) Sep 41–Jun 43. (2) Ltr, Hardin to Arnold, 4 Nov 41. 467. (3) OCE Circ Ltr Constr 101, 4 Jun 41.

[25] Ltr, Bragdon to Schley, 23 Dec 40. 686 (Bradley Fld) Part 1.

[26] 1st Ind, 7 Apr 41, on Ltr, Kingman to Robins, 22 Mar 41. 467 Part 1.



BRADLEY FIELD, WINDSOR LOCKS, CONNECTICUT

field further, he wrote:

> The tobacco sheds and farms of the environment are carried out over the field as the concealment scheme. . . . The writer noted with interest that tobacco sheds were simulated by butting end to end two regulation army barracks buildings with one common roof. All buildings are painted a dark reddish-brown to approximate the color of nearby tobacco sheds.
>
> The various building units to house personnel and equipment are well scattered over the entire grounds. . . . Large buildings are out in the open, like the tobacco sheds in the environment. Small clusters of buildings are dispersed about in the heavy woods and . . . all unnecessary clearing, grading, grubbing, and the cutting-down of any large trees are avoided. Some building units are located in gullies, with large trees giving complete overhead concealment.
>
> All existing paths and roads were left intact. Most of the new roads seem to follow the general contour of the ground. All tanks are underground or are otherwise concealed by trees.

He had only one criticism—the hangar and control tower, both bright in color, stood conspicuously in the open.[27] On 7 December 1941, the field at Windsor Locks was the only one in the United States built on a dispersed layout. When General Arnold prescribed passive pro-

[27] Memo, Engr Bd Camouflage Sec for Rcd, 29 Jul 41. 686 (Airfields) Part 26.

tection for all stations in the air frontier, Robins reproduced Bragdon's plan and distributed it as a model.[28]

Gradually, the Engineers began to take a hand in building design. During the early months of 1941, requests trickled in from the Air Corps for new plans and for changes to existing ones. When, in mid-January, Colonel Kennedy decided that the standard control tower was unsatisfactory, he asked Kemp to design a better one. Within a month the new plan was on its way to the field. In February Kennedy called for a 31-cadet barracks for use at reception centers and pilot training schools. By early March the drawings were complete. Meanwhile, more requests were coming in: for a building to house low-pressure chambers which could simulate high-altitude flight, for a heating system for hangars, for re-estimates of warehouse costs, and so forth. Few of these early jobs presented much difficulty. For example, by adding pressure lines and extra piping, Kemp quickly adapted a standard warehouse to take low-pressure chambers. The Engineers' first challenging assignment in structural design involved storage facilities for war reserves of aviation gasoline. Turned over to Lt. Col. Ludson D. Worsham, the district engineer at Pittsburgh, late in January, this work was virtually complete by the first of March.[29]

All of this was preliminary. During the first quarter of 1941 the Construction Division continued to carry the burden of designing Air Corps structures. When the next wave of air projects broke, the burden would shift to the Engineers.

Anticipating an upsurge in Air Corps construction, General Robins looked for ways to get around obstacles to further decentralization. Early in February, he approached General Brett about the possibility of giving some of Kennedy's approval authority to air commanders in the field. Referring to the preparation of layouts in the Buildings and Grounds Division, Robins maintained:

> The present system . . . is not the most efficient and expeditious method of accomplishing this work. It does not take advantage of the intimate knowledge of the ground and local utilities problems which exist in the District and Division Engineer Offices, nor does it enable responsible Air Corps field commanders to express their views before a definite plan is settled upon.[30]

Both Plank and Kemp favored the change.[31] The division engineer at San Francisco, Col. Warren T. Hannum, expressed the viewpoint of the Engineer field. In a letter to Schley on 19 February, he stated: "Insofar as possible to observe in the field, it appears that the bottleneck causing delay in planning . . . lies in the Office of the Chief of the Air Corps."[32] Bringing Kennedy around would take time and patience, but Robins intended to persist. With Somervell he resolved to cut through a second obstacle—the G–4 "freeze order"

[28] Ltr, OCE to SPD, 11 Dec 41. 686 (Airfields) Part 44.

[29] (1) OCE Circ Ltr Constr 16, 18 Jan 41, and Amendment 1, 14 Feb 41. (2) Ltr, Hardin to Div Engrs, 4 Mar 41. 686 (Airfields) Part 7. (3) Memo, Kemp for Vawter, 21 Mar 41. 686 (Airfields) Part 8. (4) Ltr, Kennedy to Schley, 7 Feb 41. 686 (Airfields) Part 5. (5) Ltr, OQMG to OCE, 23 Jan 41, and Inds. QM 600.1 (AC—Transfer to Engrs). (6) Ltr, Plank to ORD, 28 Jan 41. 635 (War Reserve) Part 4. (7) Ltr, Worsham to Schley, 1 Mar 41. 635 (Airfields) Part 1.

[30] Ltr, Robins to Brett, 8 Feb 41. 686 (Airfields) Part 5.

[31] Memo, Kemp for McAlpine, 27 Jan 41, and Plank's notations thereon. 686 (Airfields) Part 5.

[32] Ltr, Hannum to Schley, 19 Feb 41. 686 (Airfields) Part 6.

requiring Reybold's approval of major changes in standard plans. This would also take some doing, but difficulties did not dissuade the two men from trying.[33]

By the spring of 1941, the airfield transfer was virtually complete and directives for brand new Air Corps projects were coming into OCE. Rounding out facilities under the First Aviation Objective—the 12,000-pilot, 54-group program approved by Congress in the fall of 1940—were 7 airfields, 2 gunnery stations, 2 schools for mechanics, and 3 depots for overhauling engines. A second, larger increment of air projects underset the Second Aviation Objective, a goal of 84 combat groups and 30,000 pilots a year announced by General Marshall in February. To meet this objective, two dozen installations would be necessary—20 flying training stations, 2 depots, a gunnery school, and a cadet reception center. The fourth and fifth supplemental defense appropriations for 1941, approved in March and April, carried funds totaling $284,250,000 for additional air construction.[34] In launching the new projects, the Engineers got off on a different footing with the Air Corps.

Meeting with Colonel Chamberlin on 4 March, Kennedy, Tompkins, and Hardin agreed to revise site procedures. To choose locations for air depots, the General Staff would appoint War Department site boards, each to include an Engineer member named by General Schley. Initial choice of sites for other air projects would be up to the field. For training stations the commanding generals of the three Air Corps training centers—the Southeast, Gulf Coast, and West Coast—would convene investigating boards composed of air, Engineer, and medical officers. The same general procedure would apply to tactical bases, with the regional Air Force commanders convening the boards. Reports on all sites, whether from War Department, Training Center, or Air Force boards, would go first to General Brett for review and recommendation and then to G–3 and G–4 for final decision.[35] In practice the Engineers played a larger role than the one formally assigned them, for as a rule General Reybold would accept no site until Robins O.K.'d it.[36]

The new procedure went into effect just in time to prevent some serious mistakes. In February the Air Corps had begun picking locations for the Second Aviation Objective. By March, when district engineers entered the picture, this work was far advanced. At Greenville, Mississippi, Major Sturgis looked over three sites that the Southeast Training Center thought desirable. The Mississippi Delta, with its swamps, alluvial soil, and networks of drainage ditches, its heavy rains and thick fogs, seemed to Sturgis a most unlikely place to put an air base. He suggested that the Air Corps pull out of the area and build

[33] (1) Memo, Hardin for Robins and Tompkins, 12 Mar 41. 686 (Airfields) Part 7. (2) Ltr, Robins to TAG, 14 Mar 41. 686 (Airfields) Part 10.

[34] (1) Craven and Cate, *Men and Planes*, p. 137ff. (2) Memo, Hardin for Plank, 4 Apr 41. 686 (Airfields) Part 10. (3) 55 *Stat.* 34, 123.

[35] (1) Memo, Chamberlin for Rcd, 6 Mar 41. G–4/31791–6. (2) Memo, Kennedy for Chamberlin, 17 Mar 41, and Incl. G–4/32750. (3) WD Ltr AG 580 (3–21–41) M–D, 26 Mar 41. 686 (Airfields) Part 11. (4) WD Ltr AG 580 (5–7–41) MC–F–M, 13 May 41. 686 (Airfields) Part 14.

[36] D/F, Reybold to Schley, 31 May 41. 686 (Lubbock Fld) Part 1. See also 686 Part 1 for Victorsville, Calif.; Merced, Calif.; Valdosta, Ga.; Columbus, Miss.; etc.

farther north. When the airmen insisted on staying at Greenville, he did the best he could; rejecting the sites proposed by the training center, he chose another, the highest and most easily drained he could find in the area.[37] To the east, in the Mobile District, Colonel Teale also had to contend with a hard-to-build-on site. The Air Corps had selected and the General Staff had approved a 1,200-acre tract near Tuskegee, Alabama, for a field to train Negro pilots. On investigating this site, Teale found the soil was gumbo clay, "the poorest type for road building purposes . . . in the State of Alabama." He reported to Schley: "The conditions encountered are so adverse that very serious consideration should be given to abandoning the site and selecting another one." Relocating the project on another site he had in mind would, he estimated, save at least $700,000 and 6 months' time.[38] Colonel Tompkins persuaded Brett to follow the district engineer's advice. A hastily convened training center board rubber-stamped Teale's choice.[39] Other district engineers were no less vigilant. Most egregious errors made under the old procedure were swiftly uncovered and rectified.

By May, the Airport Division of the Engineering Section was hard at work studying site board reports and preparing recommendations for G–4. Because many of the reports contained little or no engineering data, Kemp and his assistants were often at a disadvantage.[40] In some instances, they had to content themselves with making general comments such as "the site appears suitable for development of an Air Corps Pilot Training School," in the case of a tract at Valdosta, Georgia;[41] or with merely quoting from a board report, as when they wrote of a site at Victorville, California: "[It] is described as 'reasonably flat desert land . . . with a sandy surface and gravelly loam of decomposed granite well drained.' From this description it would appear that the site is satisfactory from a construction viewpoint."[42] Before giving Reybold the green light on such locations, Plank checked with the districts to make sure that further investigation was unnecessary. In most cases, district engineers, who had served on the site boards, advised against making additional studies.[43]

While the work of site selection went forward, the Engineers were facing up to another challenge: designs for special technical structures at the new air depots. Among the largest and most complex of the Air Corps projects, carrying price tags of $14 million each, the 5 depots authorized in 1941 were to include separate buildings for testing and repairing engines, radios, armament, and equipment and for storing bombsights, chemicals, and explosives. Buildings serving most of these purposes could be found at the 4 original Air Corps

[37] 686 (Greenville Fld) Part 1.

[38] Ltr, Teale to Schley, 4 Apr 41. 686 (Tuskegee Airfield) Part 1.

[39] 686 (Tuskegee Airfield) Part 1.

[40] (1) Memo, Kemp for Plank, 27 May 41. 686 (Midland Fld) Part 1. (2) Memo, Kemp for Vawter, 4 Jun 41. 686 (Enid Fld) Part 1.

[41] Memo, Kemp for Plank, 21 May 41. 686 (Moody Fld) Part 1.

[42] Memo, Kemp for Plank, 27 May 41. 686 (Victorsville Fld) Part 1.

[43] (1) Telg, Schley to SWD, 28 May 41. 686 (Enid Fld) Part 1. (2) Ltr, Dist Engr Denison, Tex., to Schley, 8 Jun 41. 686 (Perren Fld) Part 1. (3) Telg, SAD to Schley, 22 May 41. 686 (Moody Fld) Part 1. (4) Telg, LMVD to Schley, 12 May 41. 686 (Lake Charles Fld) Part 1. (5) Telg, SWD to Schley, 3 Jun 41. 686 (Enid Fld) Part 1.

depots at San Antonio, Texas; Middletown, Pennsylvania; Patterson Field, Ohio; and Sacramento, California. The Sacramento Depot dated from the late thirties; the other 3, from World War I. Under construction at the Mobile and Ogden depot projects were technical buildings of recent design, but by February 1941 the Quartermaster Corps had standardized plans for only 2 or 3 such structures. When General Brett issued rush orders for 5 big new projects, the Engineers had a problem on their hands.[44]

At Wright Field, Ohio, on 1 March, Kemp conferred with officers of the Air Corps' Materiel Division. Before them were Quartermaster plans in various stages of completion, sketches prepared by Colonel Kennedy, and plans for buildings at Mobile and Sacramento. After deciding which types of buildings to construct, Kemp and the air officers turned to Maj. Fred T. Bass, the district engineer at Cincinnati, who also attended the meeting, asking him to take the plans, sketches, and partly finished drawings and quickly work out standards for all the technical structures. Responsibility for reviewing Bass' standards and Quartermaster typicals for barracks, warehouses, and the like fell to Col. Edwin H. Marks, the Ohio River Division Engineer.[45] It was a big assignment, bigger in fact than Bass and Marks at first realized.

A look at the plans turned over to him convinced Bass that redesign would greatly simplify construction. Although he knew the work would take more time than Kemp had budgeted, Bass felt that he could both "speed actual construction" and cut building costs.[46] Uncertain that the Cincinnati District could handle a crash job of this size, General Schley engaged Graham, Anderson, Probst & White of Chicago, a top architectural firm then doing air base designs for the Puerto Rico District. Under Bass' general supervision, the architects started reviewing and revising plans for twelve technical buildings late in April. By mid-June their work was complete and the Engineers had first-rate standard plans for the new Air Corps depots.[47]

Less conspicuous than the efforts to produce depot designs, but equally successful, were General Robins' moves to bring about much-needed changes in procedures. Since the airfield transfer, Robins had been doing missionary work, trying to get the Air Corps to decentralize its construction planning. By February there were signs he was making headway. Finally, in March, he turned the trick. General Brett established four air districts in the United States and listed as one of their duties co-operation with the Engineer field. With the help of high-ranking Air Corps officers whom he had known well for many years, Robins now persuaded Colonel Kennedy to ease up on layouts—a little at first, then entirely. In April, Kennedy agreed to let district engineers make preliminary lay-

[44] (1) Craven and Cate, *Men and Planes*, pp. 124–25, 138. (2) Ltr, Tompkins to Brett, 8 Mar 41. 686 (Airfields) Part 15.

[45] (1) Notes of Conf at Wright Fld, 1 Mar 41. 686 (Airfields) Part 15. (2) Ltr, Tompkins to Marks, 13 Mar 41. 686 (Airfields) Part 7.

[46] 2d Ind, Bass to Schley, 21 Apr 41, on Ltr, Plank to Marks, 4 Apr 41. 686 (Airfields) Part 11.

[47] (1) 1st Ind, 20 Mar 41, on Ltr, Tompkins to Marks, 13 Mar 41. 686 (Airfields) Part 7. (2) Ltr, Kingman to Patterson, 21 Apr 41. 686 (Airfields) Part 12. (3) Ltr, Schley to Patterson, 28 Apr 41. 686 (Airfields) Part 14. (4) Ltr, Bass to Schley, 2 Jul 41. 686 (Airfields) Part 22.

outs based on rough sketches furnished by the Buildings and Grounds Division. But he still insisted that each layout have his approval before construction started. Under continued prodding, Kennedy at length gave way. In June, Hardin was able to inform the districts that construction could begin as soon as local air commanders accepted layouts.[48] Robins' powers of persuasion were also effective with his fellow Engineer officer, the G–4, General Reybold. Arguing for recision of the "freeze order" on design, Robins emphasized the need "for modifying mobilization type buildings at times to take advantage of local conditions." He held that the change would "permit competition between suppliers, . . . take advantage of available skilled labor, and . . . tend to reduce costs and to obtain high type of materials for the same cost." Finally, he assured G–4 that no increases in cost or losses of time would result.[49] In April Reybold yielded and revoked the "freeze order."[50]

Lifting the "freeze" unleashed forces it had held in check. The door was now open to those who wished to improve upon the spartan standards of the mobilization plans, and none were more eager to enter than air station commanders. Hardly had the countermand hit the field when districts began complaining. From Los Angeles, Colonel Kelton appealed to the Chief's office to "prevent our being placed in the unenviable position that the Quartermaster has been in for years." On 16 April he wrote Tompkins:

> I have had two official letters prepared to the Chief on the following . . . but have torn them up. This office has just begun to receive numerous requests for small jobs at March Field, Hill Field, and for alterations in the fields that we are building at Tucson, Phoenix, and Muroc Lake.It is expected that these requests will multiply, especially if we show an indication of being liberal. I think the problem is about to become serious, particularly as the small jobs take such a great amount of time in proportion to the amount of money expended that we will lose sight of our main objective which is to provide new air fields for the Air Corps.[51]

Another forceful protest, this one to the Chief, came from Major Sturgis on 15 May.

> There is no apparent limit to the requests or demands of Air Corps Station Commanders for modifications, changes, improved facilities, and additional installations, both minor and major in character [Sturgis wrote]. These Commanders have formed the habit of visiting or of sending staff officers to inspect numerous other projects, completed or under construction, in order to obtain ideas for improvements. . . .[52]

Indorsing Sturgis' letter on to Schley, Brig. Gen. Max C. Tyler of the Lower Mississippi Valley Division expatiated on the activities of the commander at Meridian, who spent his weekends "flying to other fields for the purpose of collecting new ideas" so that Meridian could be in the commander's words, "the best Air Corps cantonment in the United States."[53] Clearly, air comman-

[48] (1) Plank Interv, 5 Dec 50. (2) Ltr, SPD to Schley, 19 Feb 41. 686 (Airfields) Part 6. (3) *Civil Engineering*, vol. XI, no. 4 (April 1941), p. 207. (4) Ltr, Kennedy to Robins, 17 Apr 41. 686 (Airfields) Part 11. (5) OCE Circ Ltr Constr 103, 13 Jun 41.

[49] Ltr, Robins to TAG, 14 Mar 41. 686 (Airfields) Part 10.

[50] OCE Circ Ltr Constr 67, 10 Apr 41.

[51] Ltr, Kelton to Tompkins, 16 Apr 41. 686 (Airfields) Part 13.

[52] Ltr, Sturgis to Schley, 15 May 41. 686 (Airfields) Part 15.

[53] 1st Ind, 22 May 41, on n. 52.

ders had to be restrained. The question was how.

There were several suggested solutions. General Tyler was for reinstituting the "freeze."[54] Kelton's idea was "to publish some instructions placing the responsibility squarely on the shoulders of the District Engineer until the Post is turned over to the Air Corps."[55] Sturgis was already following a plan of his own devising. Minor changes which seemed desirable and entailed no great expense, he approved automatically; but requests for major alterations or complete new buildings, he returned with the suggestion that their sponsors seek approval from the War Department.[56] Robins thought Sturgis was on the right track. He issued instructions to the districts "that minor additions or changes to authorized construction need not be specifically authorized by higher authority, but that in the case of major changes request for authorization should be submitted by the Commanding Officer through channels to the Chief of the Air Corps."[57] At the same time he and General Brett issued identical circulars, stressing the need for co-operation between Engineer and air officers in the field.[58]

Free to improve upon standard plans and specifications, the Engineers gave critical attention to the Quartermaster drawings. Concerned by reports of leaking roofs, sagging floors, and other defects in mobilization structures, General Schley on 20 May asked the field to review the 700 series plans and offer constructive suggestions. Before the week was out, replies were coming in. From Providence, Rhode Island, Lt. Col. Harley Latson, the acting district engineer, reported that Quartermaster typicals were "too general" and therefore "ambiguous and confusing." Moreover, he wrote, they were poorly prepared, improperly organized, and difficult to read. He appended a long list of recommended changes.[59] Similarly lengthy lists came from other district engineers—Lt. Col. Leonard B. Gallagher at Boston, Lt. Col. Lee S. Dillon at New York, Lt. Col. Robert C. Hunter at Sacramento, Col. Beverly C. Dunn at Seattle, and Lt. Col. Cecil R. Moore at Portland, Oregon—as well as from most of the divisions. Recommended changes totaled several hundred.[60] Hardin and Plank wanted them made fast. "As you know," Kemp told McFadden, "the date of September first, set by me for completion of the revisions, was not acceptable to the Construction Section. They want more action."[61] More action was what they got. Relying on the engineering sections in the district offices, Kemp prepared lists of desired changes and rushed them to the field. He thus enabled district staffs to doctor up the 700 series for use until he could complete his own thoroughgoing revision and publish new plans.[62]

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[54] *Ibid.*

[55] Ltr, Kelton to Tompkins, 16 Apr 41.

[56] Ltr, Sturgis to Schley, 15 May 41.

[57] Ltr, Dist Engr Detroit to GLD, 4 Oct 41. 686 (Airfields) Part 37. See also OCE Circ Ltr Constr 94, 26 May 41.

[58] (1) OCE Circ Ltr Constr 85, 6 May 41. (2) Ltr, Tompkins to Kelton, 6 May 41. 686 (Airfields) Part 13.

[59] Ltr, Latson to Schley, 26 May 41. 686 (Airfields) Part 16.

[60] 686 (Airfields) Parts 15, 16.

[61] Memo, Kemp for McFadden, 20 May 41. McFadden Reading File, 1941.

[62] (1) OCE Circ Ltr Constr 105, 16 Jun 41. (2) Memo, Kemp for Hardin, 23 Jul 41. McFadden Reading File, 1941.

Recalling the planning done in 1941 by McAlpine, Kemp, McFadden, and the district staffs, Plank said: "We really went about the business . . . from an honest to goodness engineer standpoint."[63] The record bore him out. Illustrative of the Corps' professional standards were exceptionally well-defined criteria for site selection published in July 1941. An example of sound engineering judgment was the Corps' rejection of artificial design concepts put forward by the Air Corps, such as Kennedy's idea that all runways at major fields be of concrete.[64] An instance of engineering foresight was the Corps' insistence on developing a timber frame hangar to take the place of steel, despite Kennedy's declaration that he was "unalterably opposed."[65] The Corps' scientific attitude was perhaps best seen in its continuing research into the strength of runway pavements and the bearing capacities of soils.[66] A technical branch, the Corps had once again exhibited technical proficiency in this, the latest of its successive engineering missions.

After they had hurdled major obstacles in dealing with the Air Corps and had overcome serious deficiencies in plans, the Engineers took the program in stride. Tasks that had cost the Quartermaster Corps a good deal of trouble, they handled with relative ease. As the only federal construction agency that went "back to the people," the Corps had long ago developed a grass roots approach in dealing with the public.[67] This approach worked just as well for military projects as for river, harbor, and flood control jobs. For example, district real estate men knew the fair price of the land in their areas, and the owners knew they knew. Moreover, bargaining was often on a friendly basis. The district representative might preface his offer by asking: "How's Aunt Mollie?" Condemnation was a rarity in the Engineer program.[68] Similarly, General Schley was able to give due weight to congressional recommendations on behalf of constituents. Although he regularly consulted the Construction Advisory Committee in selecting firms for negotiated contracts, he was less dependent on the committee's advice than was The Quartermaster General. Merely by picking up the telephone and calling one of his district engineers, he could get an on-the-spot appraisal of a contractor's ability and reputation. Thus he could confidently turn down the concern picked by the committee for a $1,440,000 airfield at East Baton Rouge, Louisiana, and choose instead a combination recommended by both the district engineer at New Orleans and the district congressman. The contractor performed creditably—evidence that political necessities and public interest need not be incompatible.[69]

In sharp contrast to the Quartermaster Corps, the Corps of Engineers relied heavily on competitive fixed-price contracts. Schley declared it "the general policy on construction . . . con-

[63] Plank Interv, 5 Dec 50.

[64] (1) OCE Circ Ltr Constr 126, 3 Jul 41. (2) OCE Circ Ltr Constr 145, 12 Aug 41. (3) 686.61 Part 3.

[65] 1st Ind, 14 Apr 41, on Ltr, Hardin to Kennedy, 8 Apr 41. 686 (Airfields) Part 10. See also Ltr, OCE to SAD, 17 Sep 41. 686 (Airfields) Part 34.

[66] See ch. XIX, below.

[67] Interv with Gen Reybold, 12 Mar 59.

[68] (1) Sturgis Interv, 17 Oct 63. (2) Constr Div OQMG, Real Estate PR, 15 Nov 41.

[69] (1) Final Rpt of the Constr Adv Comm, 15 Mar 42. EHD Files. (2) 686 (Harding Fld) Part 1.

tracts to obtain bids from contractors throughout the continental limits of the United States."[70] With the engineering force at his disposal, he was in a position to implement this policy. There were exceptions, to be sure—offshore bases, aircraft assembly plants, and other large and very urgent projects. Nevertheless, by the fall of 1941, Patterson could report that in dollar value approximately 60 percent of the Engineers' construction work was fixed-price as compared with under 25 percent for the Quartermaster program. "Of course," Patterson stated, "in fairness to the Quartermaster Corps I want to point out that their projects in the main have been larger projects and projects where perhaps more speed was required." He emphasized, however, that the Engineers were "habituated to the system" of competitive bidding. "That is their general rule, unquestionably," he said, "and wherever the engineers depart from it they do it with reluctance and only under the spur of necessity, where speed is of the essence and they have got to do it."[71] Needless to say, congressional critics of negotiated fixed-fee contracts endorsed the Corps' policy.

There were some troubles, of course. District engineers, as always, faced problems peculiar to their localities. At Vicksburg, in a cotton-growing region, Sturgis was naturally confronted with shortages of materials and skilled workmen. At Detroit, in strong union territory, Lt. Col. Ralph G. Barrows had two strikes at one project within a month.[72] The air commanders' unceasing quest for "something better" forced the Engineers to keep a watchful eye.[73] For example, when the commanding officer at MacDill Field asked for $3,000 worth of "Coolite" glass in his hangars to reduce heat and glare, Col. William C. Weeks of the Jacksonville District turned down the request and accomplished the same result by spraying blue paint on ordinary window glass at a cost of $50.[74] Friction with the Buildings and Grounds Division continued. After the organization of the Army Air Forces (AAF) under General Arnold's command in June 1941, Kennedy, offering no explanation, withdrew his permission to start construction before he approved layouts. On occasion district engineers were able to force quick approvals by calling attention to delays; but there was many an exasperating wait for approvals. There was also some confusion, as when the Air Corps sent a layout for the air base at Greenville, South Carolina, to the field at Greenville, Mississippi.[75] Plank recalled numerous other "little battles" with Kennedy. "We won some, we lost some," he said. The skirmishing did not die down until 1942, when Col. Walter J. Reed took charge of the Buildings and Grounds Division.[76] But except for those concerning layouts, the disputes did not appreciably retard construction progress.

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[70] Memo, Schley for Patterson, 7 Mar 41. 3820 (Nat Def) Part 3.

[71] Patterson's Testimony, 30 Sep 41. In H Comm on Mil Affs, 77th Cong, 1st sess, *Hearings* on H R 5630, p. 8.

[72] (1) Sturgis Interv, 17 Oct 63. (2) Table, prepared by EHD, Work Stoppages on Mil Constr Jobs, Jan–Dec 1941.

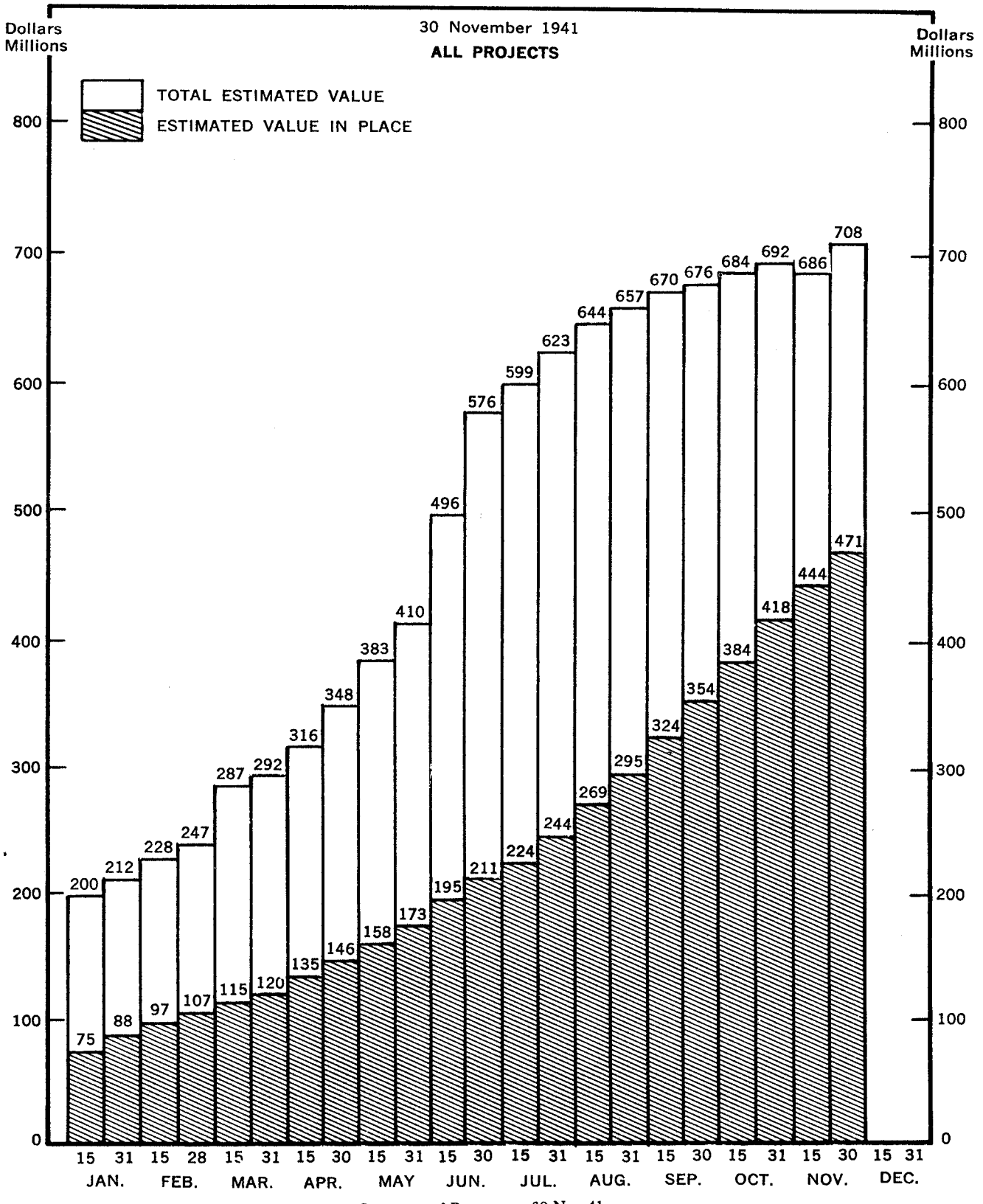
[73] Reybold Interv, 12 Mar 59.

[74] 686 (MacDill Fld) Part 6.

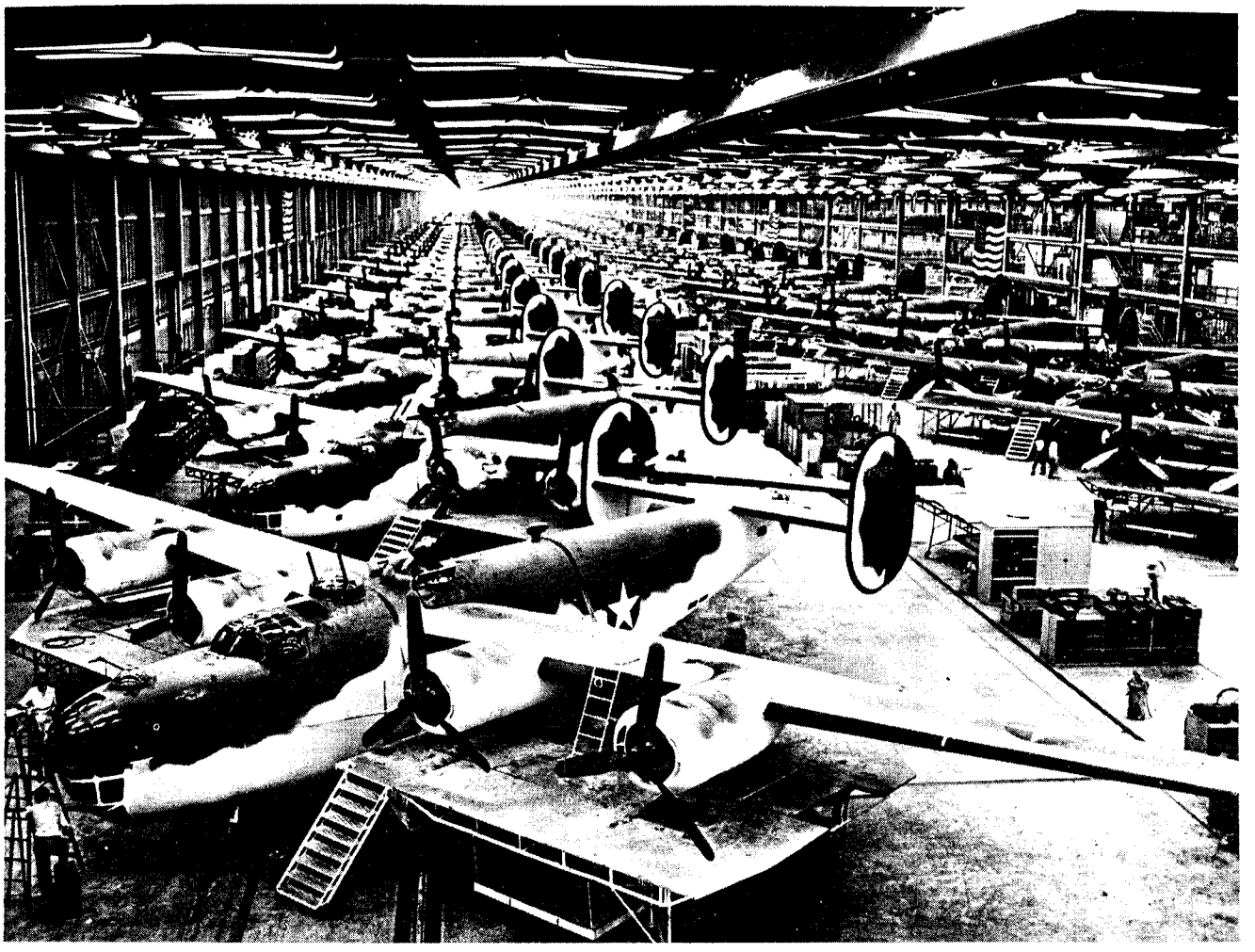
[75] (1) AR 95–5, 20 Jun 41. (2) Ltr, Kennedy to Robins, 9 Jul 41. 686 (Airfields) Part 23. (3) 686 Part 1 for Kaye, Midland, and Greenville Flds. (4) Sturgis Interv, 26 Sep 62.

[76] Plank Interv, 5 Dec 50.

CHART 15—CONSTRUCTION BY THE CORPS OF ENGINEERS AT AIR CORPS STATIONS—U.S. ARMY



Source: OCE, Constr at Air Corps Stations: Summary of Progress to 30 Nov 41.



FORT WORTH AIRCRAFT ASSEMBLY PLANT, TEXAS

Between 1 February and 30 November 1941, the Engineers put in place Air Corps construction with an estimated value of $396 million. (*Chart 15*) A week before Pearl Harbor, airmen were occupying new facilities at 96 stations—fields, depots, schools, and replacement centers. Twenty more new installations were nearly ready for use, including three of the four big aircraft assembly plants. In January 1941 the air program had amounted to $200 million and was 32.5 percent complete. In November the program stood at $708 million and was 66.5 percent complete. As their work load increased, the Engineers had gained momentum, narrowing the gap between work accomplished and work undone.[77]

Many praised the Engineers' performance, but Secretary Stimson probably put it best. Reviewing the Corps' construction for the Army Air Forces and the CAA and its efforts on the offshore bases and other defense projects, he wrote: "It has performed these heavy tasks with its usual efficiency and thoroughness."[78]

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[77] OCE, Constr at AC Stations: Summary of Progress to 30 Nov 41. EHD Files.

[78] *Report of the Secretary of War to the President, 1941* (Washington, 1941), p. 13.

Reaching a Decision

By the early summer of 1941, the Engineer organization was deeply committed to military construction work. At the close of the fiscal year, General Schley reported an unexpended balance of $378 million for rivers and harbors and flood control as against $694 million for AAF, CAA, and overseas base construction. During the previous twelve months, the Corps had received $210 million for civil works and upwards of $800 million for military projects. As Schley had foreseen, civil appropriations were drying up. More and more civilians of the Engineer Department were at work on airfield projects. The map of the Engineer field reflected the change; there was a new Wright Field District in the Ohio River Division and a whole new division, the Eastern, with districts in Newfoundland, Bermuda, Jamaica, and Trinidad.[79] Work for the CAA was likely to continue. Engineer officers held key positions in that organization; Brig. Gen. Donald H. Connolly was CAA Administrator and Lt. Col. Lucius D. Clay was his assistant. But military airfields were another story. Suspended over the Corps like a Damoclean sword was the cutoff date in the McKellar amendment, 1 July 1942, the day responsibility would revert to The Quartermaster General. Schley could not afford to wait for the blow to fall. He had to eliminate the threat.

On 12 May 1941 he made his move. In a memorandum to the Chief of Staff, he quoted the language of the McKellar amendment. Calling Marshall's attention to the expiration date, he wrote:

> If it is desired that the Corps of Engineers continue to perform military construction works to carry out the War Department program after June 30, 1942, it is suggested that proper legislation be prepared to extend the provisions of the above quoted law.
>
> Since there may be advantages to the War Department in the utilization of the Engineer Department organization at any time for construction of War Department projects, it is suggested that such legislation may properly be in the form of an amendment to the National Defense Act of 1920.[80]

Schley had reason to believe that Congress might be willing to entertain this proposal. A number of Congressmen had recently gone on record as favoring some such change. In his speech before the House on 16 January, Representative Engel had said:

> If you do not want to transfer the Construction Quartermaster Corps to the Army Engineering Corps, you ought to put engineers into the Construction Quartermaster Corps; but, for heaven's sake, stop the lawyers filling teeth and the dentists practicing law injustices.[81]

At an appropriation hearing three weeks later, Representative D. Lane Powers had informed Major Hardin: "My personal opinion is that the engineers should do all construction for the Army."[82] Similarly, at a hearing before the House Military Affairs Committee, Representative Charles H. Elston had stated:

> I think we all recognize that the Army engineers are a very, very capable outfit; in my judgment, much better than any of

[79] (1) *Annual Report of the Chief of Engineers, U.S. Army, 1941*, Part 1, vol. I, pp. 22, 1. (2) Maj. Gen. J. L. Schley, "National Defense Construction Program of the Corps of Engineers, U.S. Army," *The Constructor*, July 1941, pp. 69–70.

[80] Memo, Schley for Marshall, 12 May 41. G–4/31324.

[81] 87 *Cong. Rec.* 194.

[82] H Subcomm of the Comm on Appns, 77th Cong, 1st sess, *Hearings on the Fourth Supplemental National Defense Appropriation Bill for 1941*, p. 133.

the other Bureaus operating in and around Washington; and I think we have got to recognize that now we are engaged in a large national-defense program, and some work that the Army engineers would otherwise have done is not going to be undertaken. . . . The Army engineers will have more time to devote to national-defense work.[83]

Always strong, the Corps' congressional support grew stronger as committee investigations revealed Quartermaster shortcomings but raised no criticism against the Engineers.

When Schley sent his memo to Marshall on 12 May, a very different proposal was under consideration at the top level of the War Department—Benedict Crowell's recommendation for a separate construction corps. On 5 May Patterson had asked his executive, General Burns: should the Construction Division be lifted out of the Quartermaster Corps and assigned all construction for the Army. The existing Quartermaster-Engineer arrangement was neither "logical nor . . . wholly satisfactory in practice," the Under Secretary said. "The Construction Division of the Quartermaster Corps is now better organized and could in my opinion take the entire load as a separate service."[84] In his reply the next day, Burns questioned whether a change was necessary and pointed out that any reorganization would mean delay. It was time, he felt, to "stop agitating the question . . . and drive through on basis of the present set-up modified only as experience directs."[85] Burns' advice went unheeded. The agitation continued.

Patterson brought the matter up again at a conference in Stimson's office on 19 May, saying that he thought it essential to have one construction branch instead of two. General Marshall agreed and said he would like to see a separate construction corps with Somervell in charge. "As I understand it," Stimson interposed, "you want a new Construction and Maintenance Corps, separate from the Engineers and Quartermaster, with detailed officers from those arms." The colloquy continued:

Patterson: I see no evidence of personal supervision of Quartermaster construction on the part of the Quartermaster Corps.

Marshall: General Gregory has confidence in General Somervell and has delegated the authority to him.

. . . . . .

Stimson: This would not include river and harbor work, I understand.

Moore: There was a big fight after the last War, on this subject.

Marshall: It was a three-cornered fight between the Quartermaster, the Engineers, and General R. C. Marshall, who wanted to take over. It ended with no change being made.

Stimson: Would this Construction and Maintenance Corps be purely for the emergency, or would it be maintained after the emergency?

Marshall: It would be kept as a detailed Corps.

The Chief of Staff thought the change could be brought about without stirring up much controversy.[86] The top men in the War Department seemed to be veering toward Crowell's view.

Coming at this time, the Engineer proposal was inopportune. General Marshall did not wish to amend the defense act as Schley had suggested, for

[83] May Comm *Hearings*, Part 1, pp. 180–81.

[84] Memo, Patterson for Burns, 5 May 41. USW Files, Constr thru Nov 41.

[85] Memo, Burns for Patterson, 6 May 41. Same File.

[86] Conf in OSW, Stimson, Patterson, Marshall, Moore, *et al.*, 19 May 41. CofS Misc Confs 1938–42.

he was considering asking Congress for another, far more drastic change. He did initiate discussions on the subject of extending the authority under the McKellar amendment to 1 July 1944, but at a conference on 7 June 1941, Generals Moore, Reybold, and Gregory decided against it. Schley's memorandum came back to him with a one-word indorsement, "Noted." He immediately resubmitted it but could get no further action from the General Staff.[87]

Meanwhile, Madigan at Patterson's request was trying to figure out how the long-standing question of responsibility ought to be resolved. Both the Under Secretary and his adviser believed a change was desirable. Patterson was disturbed by reports that portions of the program were lagging. Madigan had received complaints from contractor friends about their headaches with two Army construction agencies, two sets of regulations, and two systems of bookkeeping. Clearly, the time had come to settle the problem of organization once and for all. But still to be decided was the form the settlement would take.[88]

Madigan studied the problem for 3 months, during which he talked at length with Crowell, Robins, Reybold, and Harrison but did not consult The Quartermaster General. Although Gregory knew through the grapevine what was going on, he let matters run their course. While Somervell never mentioned it to his superior, he was directly involved. He lent Colonel Covell to Madigan to work on the study and he sent Major Robinson to help. Throughout, Somervell himself worked closely with Madigan, who relied heavily on his advice.[89] Most War Department insiders knew of Somervell's conduct toward Gregory. And few of them ever forgot it.

Somervell almost certainly could have become chief of a separate corps had he so desired, but that was not what he wanted. General Schley was due to retire in October 1941, and Somervell wanted desperately to succeed him. Perhaps, as some believed, Somervell had "overglamourized" the office of Chief. Nonetheless, he went all out to get it. He asked Madigan to get it for him; and Brig. Gen. John C. H. Lee, himself in line for the post, spoke to Stimson on his friend Somervell's behalf. But the gift was not Madigan's to give, and Stimson declined to intercede. The next Chief of Engineers, like his predecessors, would be nominated by a board of three officers, including two Engineers, appointed by the Chief of Staff.[90]

There were formidable obstacles in Somervell's path. According to his temporary rank of brigadier general, he stood 14th on the list of Engineer officers; according to his permanent rank of lieutenant colonel, he stood 58th. His recent career had been outside the Corps. The circumstances of his appointment to the Construction Division and his taking of Engineer officers to staff that organization had caused some resentment among members of his own Corps.[91] Illustrative of General Schley's attitude

[87] D/F, Reybold for Schley, 10 Jul 40, and Rcd thereon. G–4/31324.

[88] (1) Memo, Patterson for Madigan, 9 May 41. USW Files, Constr thru Nov 1941. (2) Madigan Interv, 18 Jun 56.

[89] Madigan Interv, 18 Jun 56; Groves Interv, 19 Jun 56.

[90] (1) Madigan Interv, 18 Jun 56; Lee Interv, 25 Apr 57. (2) Stimson Diary, 13 Jun 41.

[91] (1) OCE, *The Officers of the Corps of Engineers, U.S. Army* (Washington, 1941), pp. 1–5. (2) Schley Interv, 26 Oct 55; Reybold Interv, 12 Mar 59.

toward him was an incident recounted by Madigan. One day in the summer of 1941 a high-ranking Engineer officer came into Patterson's office with a paper in his hand. It was Somervell's efficiency rating, and on it Schley had written: "Officially, the whereabouts of this man is unknown to me."[92] Still Somervell was sanguine. The Engineers had long sought the military construction function. Now they needed it. If the Quartermaster Construction Division went over to them, would he not be the logical man to head the combined organization as Chief of Engineers.

As Madigan probed deeper into the subject, he became convinced that military construction properly belonged with the Corps of Engineers. The Construction Division, under Somervell, was an Engineer organization in fact if not in name. Engineer officers were running the Quartermaster program. Somervell had patterned his organization in Washington and in the field on the older and stronger Engineer Department. Moreover, the Engineers already had airfields. The Quartermaster General, Madigan reasoned, ought not to have construction; he should concentrate on fulfilling his other missions. Nor was a separate corps desirable. In time of peace it would have little more to do than post maintenance. Real estate belonged with construction, and, Madigan concluded, so did repairs and utilities.[93] When Groves learned that Madigan planned to give the Engineers the unwanted task of maintenance, he became alarmed. He pleaded with Somervell not to saddle the Corps with housekeeping chores. But Somervell, who had only a limited acquaintance with life on Army posts, failed to see Groves' point. Repairs and utilities would be part of the package.[94]

On 15 August 1941, Madigan submitted his findings to Patterson. In a 20-page report, he set forth the case for consolidating all War Department construction, real estate, and maintenance activities in the Corps of Engineers. He presented the time-honored arguments. The Corps was a technical branch specializing in construction. Madigan stressed the civil works experience and the wartime mission of building in theaters of operations. The Corps possessed "a well-established, relatively large and going organization." Madigan pointed out that because of their civil program the Engineers could maintain this organization in time of peace. Moreover, he asserted, military construction would further the training of Engineer officers. As for the maintenance function, he pointed to the "obvious advantage" of having structures kept up "by the same organization which built them." Madigan supported his conclusions with statistical tables and maps. As an appendix to the report he included a draft of a bill transferring these Quartermaster functions to the Engineers.[95] Patterson read the report and promptly approved it.

Having decided what course to take, the Under Secretary moved fast. On the 15th, the same day Madigan turned in his report, Patterson recommended to Stimson "that the entire job . . .

[92] Madigan Interv, 18 Jun 56.

[93] (1) *Ibid.* (2) Rpt, Madigan to Patterson, Consolidation of Constr Work, WD, 15 Aug 41. EHD Files.

[94] (1) Groves Interv, 19 Jun 56. (2) Groves Comments, IX, 3.

[95] Rpt, Madigan to Patterson, Consolidation of Constr Work, WD, 15 Aug 41.

be given to the Engineers." In a memorandum for the Secretary, Patterson said:

> The Engineers . . . are now organized, and have been for years, on a country-wide basis. They have their district organizations. . . . If they had had charge of Army construction a year ago, they would have moved in with a going organization and the program, I am sure, would have been carried out in better fashion than was the case with the Quartermaster.

He informed the Secretary that new legislation would be necessary, adding, "If you approve, I will see that the bill is prepared and put into the proper channel."[96] On the 15th he also wrote to Marshall, attaching a copy of his comments to Stimson and stating, "I am sure that such a measure would clear up a good many of our troubles."[97] On the 16th the Secretary returned Patterson's memo with the notation: "I fully approve of this. You begin the necessary steps to carry it out. HLS."[98] At that Madigan was ready to send the bill to Congress, but Patterson restrained him. This was a matter for the Chief of Staff. General Marshall was with the President, conferring with Churchill off the Newfoundland coast. They would have to wait. Meantime, Madigan took a copy of his report to the Secretary of the General Staff, who agreed to show it to Marshall.

Upon his return to Washington, the Chief of Staff sent for Madigan, who gave the following account of their conversation. The time was 8:30 A.M.; the probable date was Monday, the 18th of August. Marshall began by saying that he had read Madigan's report and liked it, but he had a somewhat different plan in mind. He did not think construction should go to the Engineers. He favored establishing a separate corps. A major general, a man with a strong technical background, would head the new organization. His staff would be heavily civilian. The major general would prepare estimates, appear before Congress—before Marshall could go further, Madigan broke in. That major general, he said, would have the same standing on the Hill as a Salvation Army general. "Every member of Congress knows the Chief of Engineers by name," he declared. "If you want to throw away the best political contact anyone ever had with Congress, I can't stop you." Madigan had scored. Marshall saw the light. "We'll put it in the Engineers," he said. Madigan rose to leave, then he turned and said, "One favor; no staff study, please." Marshall agreed. He wrote "O.K., GCM" on the report and asked Madigan to take it to General Moore to implement. Marshall then added a condition of his own. Madigan was to handle the defense of the bill before the congressional committees. The Chief of Staff wanted Army officers kept out of it.[99]

During the last 2 weeks of August, several other noteworthy developments took place. Around the 20th, the President sent his nomination for the next Chief of Engineers to the Senate. The choice was General Reybold.[100] On the 29th Stimson took a résumé of Madigan's

[96] Memo, Patterson for Stimson, 15 Aug 41. AG 020 (4–21–39).
[97] Memo, Patterson for Marshall, 15 Aug 41. G–4/31324.
[98] Quoted in Memo, Reybold for Marshall, 26 Aug 41. G–4/31324.
[99] Madigan Interv, 18 Jun 56.
[100] *ENR*, August 21, 1941, p. 7.

study to a Cabinet meeting and showed it to the President. Roosevelt looked it over, said he "loved it," and initialed it "O.K., FDR."[101] At this point General Gregory appeared in Patterson's office to ask if rumors that a transfer bill would soon be introduced were true. Patterson said they were. Gregory thereupon decided to appeal to the Chief of Staff.[102]

In a memorandum to Marshall on 4 September, he defended his construction record and protested against the proposed transfer. Gregory pointed out that the Quartermaster Corps had labored "in the heat of the day" to accomplish the tremendous task of housing the new Army. It had done the work well, he said, and had done it on time. Submission of a bill to relieve the Quartermaster Corps of construction at this time would, he declared, have "a rather unfortunate effect upon the morale of the Quartermaster officers who will feel that the transfer is being made because of the manner in which the work was being performed rather than for other considerations." Gregory proceeded to attack Madigan's arguments for a change. The Quartermaster Corps had handled construction at military posts for over a century and a half. Rivers and harbors work afforded no experience for building cantonments and munitions plants. In any event, work in the United States was merely incidental to the Engineers' real mission—construction in theaters of operations. "It is inconceivable," Gregory contended, "that during a major emergency involving active operations, that the Engineer Corps should or would neglect its important functions on the field of battle by directing its personnel . . . to carry on routine construction in the Zone of the Interior." To state that military construction in this country would give the Engineers valuable experience was untrue. Combat construction was quite different from any work performed by the Quartermaster Corps. "Both the Engineer Corps and the Army as a whole would suffer by any attempt to combine these two inherently different activities." Gregory regarded maintenance and repairs as "a distinct and separate problem." This work was intimately bound up with Quartermaster duties at every Army post.

GENERAL REYBOLD

[101] (1) Madigan Interv, 18 Jun 56. (2) Memo, Patterson for Dir of the Budget, 29 Aug 41. USW Files, Constr, Transfer QM–CE.

[102] (1) Gregory's Testimony, 1 Oct 41. In H Comm on Mil Affs, 77th Cong, 1st sess, *Hearings* on H R 5630, p. 70. (2) Patterson's Testimony, 22 Sep 41. In S Comm on Mil Affs, 77th Cong, 1st sess, *Hearings* on S 1884, p. 26.

WAR DEPARTMENT

OFFICE OF THE UNDER SECRETARY

WASHINGTON, D. C.

August 28, 1941

MEMORANDUM FOR THE PRESIDENT:

Subject: Transfer of Army Building Construction to Corps of Engineers.

The present law requires that building construction for the Army be done by the Quartermaster. In 1940 Congress provided that the Secretary might assign part of the construction program to the Engineers. The Secretary, accordingly, assigned all Air Corps construction and all work on the Atlantic island bases to the Engineers.

The result is that now two-thirds of the construction work is being done by the Quartermaster, one-third by the Engineers.

I have drafted a bill which will put all Army construction work with the Engineers. It seems plain: first, that responsibility for construction work should be concentrated in one branch; second, that the Corps of Engineers is the branch best suited for handling the work.

The Engineers, as you know, do a great deal of civilian construction in normal times, rivers and harbors, flood control, etc., and are a going concern. The Quartermaster, on the other hand, has normally no adequate organization to handle construction. If we had had the Engineers on the entire construction program last year they would have moved in with an experienced organization and much waste would have been avoided.

The Secretary of War, the Chief of Staff and all others in the War Department familiar with the problems, are in favor of placing this entire work with the Engineers.

If you will give your approval, I will advise the Budget that the bill is in accordance with your policy and will take the necessary measures.

Robert P. Patterson,
Under Secretary of War.

OK FDR

8/29/41

> The Quartermaster Corps is already on the job [he wrote]. It is in intimate touch with every phase of Army life. There is a Quartermaster officer wherever a group of soldiers can be found. The Engineer Corps, on the other hand, handles specialized work usually completely aloof from the rest of the Army and entirely out of touch with the day to day life of military organizations.

He strongly advised the Chief of Staff to keep things as they were.[103]

Marshall had no intention of preserving the *status quo*, but he was impressed with Gregory's argument concerning maintenance and repairs. He turned to General Moore for advice.[104] After consulting Reybold, Moore informed the Chief of Staff that maintenance was not a separate problem; it was closely related to new construction. "Maintenance of buildings, of sewer and water systems, and of roads certainly is not to be classed as housekeeping activities," Moore wrote. "It is civil engineering and would be of immense value to combat engineers." In closing, Moore repeated Madigan's statement: "The proposed consolidation will insure that all structures of the Army are maintained by the same organization which built them and which is familiar with their design and construction."[105]

That settled the matter. Gregory's protest had failed. Attention now centered on Congress.

The "Madigan Bill"

On 3 September 1941 Senator Elbert D. Thomas introduced the transfer measure in the Senate; five days later Representative May introduced an identical measure in the House.[106] The bills went to the Committees on Military Affairs. Meanwhile, in the War Department, sponsors of the plan began to map their strategy, conscious that there must be no tactical blunders while hearings were in progress. Patterson and Madigan carefully selected the men to appear before the congressional committees. Only one military man would testify—the Chief of Staff. The other witnesses would be Knudsen, Harrison, Patterson, and Madigan. When Knudsen and Harrison informed him that they would be unable to attend the hearings, Patterson did not replace them. To obviate the need for testimony by The Quartermaster General, Marshall would introduce Gregory's memorandum of 4 September.[107] That others might come forward to oppose the transfer had to be considered.

A possible opponent of the transfer was Senator Truman, whose investigating committee had recently gone on record as favoring a separate construction corps. His views would carry weight with the Senate. In mid-September Amberg learned that Truman was on his way to St. Louis and would be there for a few days at the Hotel Coronado. Madigan flew to St. Louis, went to Truman's room, and, sitting on the bed, persuaded him to go along with the transfer. Madigan wrote out a telegram to Chairman

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[103] Memo, Gregory for Marshall, 4 Sep 41. QM 600.1 1918–41.

[104] Handwritten note, Marshall to Moore, undated. OCS 16600–88.

[105] Memo, Moore for Marshall, 8 Sep 41. OCS 16600–88.

[106] 87 *Cong. Rec.* 7250, 7393.

[107] (1) Marshall's Testimony, 22 Sep 41. In S Comm on Mil Affs, 77th Cong, 1st sess, *Hearings* on S 1884, p. 20. (2) Memo, Patterson for H. C. Peterson, 16 Sep 41. (3) Memo, Patterson for Knudsen, 17 Sep 41. Last two in USW Files, Constr, Transfer QM–CE. (4) Memo, Harrison for Patterson, 19 Sep 41. WPB Files, 411.33 (Constr Projs—Mil) 1940–41.

Reynolds of the Senate Military Affairs Committee: "Recommend that Senate Bill 1884 be favorably reported. It does not meet completely the recommendations of Special Committee . . . , but it is a step in the right direction." Truman signed the telegram and Madigan sent it.[108]

Important though they felt it was to have key Senators on their side, proponents of the measure knew that success or failure might hinge upon the attitude of the construction industry. It therefore came as a relief to them when *The Constructor*, official organ of the AGC, announced that the "national association is taking no position with respect to the legislation."[109] At first no such assurance was forthcoming from the engineering societies. On 11 September, the *Engineering News-Record* pointed out that the Corps of Engineers had "hitherto done little" building construction.[110] A week later the magazine expressed doubt that the Engineers could handle the job.[111] Members of the profession registered concern. Over the years the Corps of Engineers had relied heavily upon its own forces for engineering and design. Fearful that the Corps would discontinue the Quartermaster practice of contracting for professional services, representatives of engineering societies throughout the country went to Washington to confer with high-ranking Engineer officers. Reybold and Robins assured them there would be no change in the method of doing business. Apparently satisfied, the delegates returned home.[112] A short time later, the *News-Record* changed its tune. Commenting editorially on the proposed transfer, the publication stated:

> Consolidation of the Construction Division of the Quartermaster Corps with the Corps of Engineers . . . would appear to be a logical step toward greater efficiency in army construction. And not only should it save the nation money and time in an emergency such as that of the present, but consolidation will be an advantage to both of the Army organizations involved. Neither has had a fair deal under the artificial division of authority that existed heretofore.
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> . . . . . .
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> So, from many angles, the consolidation promises advantages. It gives the Army, in one branch of the service, the efficient decentralized and experienced construction and contracting organization of the Corps of Engineers and the building design, construction and maintenance experts of the Construction Division of the Quartermaster Corps. It gives to these previously separate forces the abilities that each lacked separately, and it guards them against being made scapegoats in impossible situations. It furthermore assures the nation an efficiency in emergency defense construction which it has previously been denied.
>
> There is one other advantage. When peaceful times come back again the men who served temporarily in the Corps of Engineers during this emergency will go back into civil life with a broader experience in construction operations than could have been obtained in either of the two agencies of the old set-up; and the professional soldiers who remain in the Corps of Engineers with its broadened scope of peacetime activities will gain the more diversified experience that is so essential to efficient expansion in some future emergency.[113]

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[108] (1) Memo, Amberg for Madigan, 17 Sep 41. USW Files, Constr, Transfer QM–CE. (2) Madigan Interv, 18 Jun 56. (3) Telg, Madigan to Patterson, 21 Sep 41. Madigan Files, Bill—Re Consolidation.

[109] *The Constructor*, October 1941, p. 26.

[110] *ENR*, September 11, 1941, p. 66.

[111] *ENR*, September 18, 1941, p. 1.

[112] (1) Tel Conv, Styer and Dist Engr Chicago, 16 Jan 42. Opns Br Files, GLD. (2) Patterson's Testimony, 30 Sep 41. In H Comm on Mil Affs, 77th Cong, 1st sess, *Hearings* on H R 5630, pp. 9–10.

[113] *ENR*, September 25, 1941, p. 53.

On the morning of 22 September, the Senate Military Affairs Committee began hearings on the proposal. Appearing as the first witness, Patterson gave the War Department's reasons for advocating a change. The request for legislation, the Under Secretary stated, was not a reflection upon General Gregory and his organization. The Quartermaster Corps had performed creditably under most adverse conditions. Nevertheless, Patterson testified:

> I submit that better results will be obtained by placing the work with the Engineers . . . . The Engineers in normal times have a well-established, large, active organization for construction work, due to the many projects of a civilian character which they direct and carry to completion. In war or in time of national emergency, it requires no great effort to turn that organization to the task of building what may be needed for the Army. The Quartermaster Corps, on the other hand, has little to do in the way of construction in normal times, and its organization is necessarily not on a large scale. With the coming of an emergency, it has to build its organization from the grass roots. There can be no question, I think, that the waste that always goes with haste will be kept to a minimum if the Engineers take over the entire task.

To strengthen his case, Patterson read a letter in which Harrison and Knudsen gave the bill their unqualified indorsement.[114] General Marshall followed the Under Secretary to the stand. "I think this is a very important measure," he told the committee. "It is fundamentally sound; it is logical; it should have been done long ago." After introducing Gregory's letter, he continued: "I am speaking with very great frankness to you gentlemen. There is no doubt whatever in my mind that this is the thing to do. It is businesslike, it is decidedly to the advantage of the Government, and it certainly would be a great help to the War Department."[115]

The Senators were well disposed. When Marshall submitted Gregory's memorandum, the committee members paid scant attention to the argument for keeping construction in the Quartermaster Corps. Nor did they comment on Patterson's thin excuse that Madigan had not discussed the matter with The Quartermaster General because one or the other of them had always been "out of town." After Marshall concluded his remarks, several members announced that they were ready to vote then and there. But Senator Chan Gurney objected. Although he favored the bill and intended to vote for it, he demanded that The Quartermaster General be heard. The committee asked Gregory to appear that afternoon. Just before the noon recess, Chairman Reynolds read a telegram from Senator Truman urging the committee to report the bill favorably.[116]

At four o'clock that afternoon, General Gregory found himself in the position that his predecessor, General Rogers, had occupied twenty years before. Not wishing to be in diametric opposition to Patterson, Marshall, and Stimson, Gregory told the committee that his department or the Corps of Engineers could do construction equally well. But on the question of maintenance, he took a stronger stand. This function was bound up with Quartermaster activities on every post and could not be separated from them without loss of

[114] S Comm on Mil Affs, 77th Cong, 1st sess, *Hearings* on S 1884, pp. 2–17.

[115] *Ibid.*, pp. 17–22.

[116] *Ibid.*, pp. 26, 36–37.

efficiency. Moreover, Gregory stated: "The Engineer Corps is primarily a combat organization. Its officers are trained along those lines. They are eligible for promotion in the line. To saddle them with the task of maintenance and repair—which would occupy, if done properly, at least half of their personnel—seems to me rather poor organization." Madigan countered by introducing Moore's memorandum for Marshall on the maintenance question. The Senators proceeded to give the measure their unanimous indorsement and reported the bill out favorably that afternoon.[117]

The House committee hearings, held on 29 September and 1 October, proved to be more searching. The Congressmen were less inclined to accept Patterson's and Marshall's arguments than the Senators had been. Representative Faddis saw no reason why the Quartermaster Corps could not perform all construction and thus put an end to the duplication that War Department spokesmen made so much of.[118] Representative Kilday questioned Madigan closely. Apparently suspecting some subterfuge, Kilday kept probing for hidden motives. He did not like the treatment Gregory had received. Although Madigan had worked on the transfer for three months and had discussed it with scores of persons, including Somervell, he had not gotten around to The Quartermaster General. Furthermore, Kilday felt that Gregory had been less than candid. Chairman May, a strong supporter of the bill, tried to end discussion on this point by ruling that it had nothing to do with the legislation under consideration. Kilday declared that it did. When he threatened to appeal to the committee, May gave in and let him continue. Under questioning, Madigan admitted that officers were prohibited from expressing opinions contrary to those of the President, the Secretary of War, and the Chief of Staff. "This phase of the Army regulation," Kilday emphasized, "always confronts an officer who appears before a committee."[119]

Members of the House group seemed interested in hearing Gregory's side of the case. But on the stand, The Quartermaster General again refused to speak out against the proposed consolidation. There was, he said, no question but that all construction ought to be under one branch. Whether that branch was to be the Corps of Engineers or the Quartermaster Corps was a matter for Congress to decide. "This bill," Gregory stated, "has been presented as a War Department bill, and I feel that I cannot properly oppose it." On the question of maintenance, he told the committee that he had a "decided feeling." This function, as he had pointed out to the Senate group, was a part of Quartermaster work at every post and should remain so.[120]

The hearings were over. All had not gone well. Marshall feared that Madigan had "antagonized the committee." Several members had joined Kilday and Faddis in opposition to the transfer. These men felt that construction could be consolidated as conveniently in the Quartermaster Corps as in the Corps of

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[117] (1) *Ibid.*, pp. 38–49. (2) S Rpt 680, 77th Cong, 1st sess, Sep 22, 1941.

[118] H Comm on Mil Affs, 77th Cong, 1st sess, *Hearings* on H R 5630, p. 43.

[119] *Ibid.*, pp. 55–57.

[120] *Ibid.*, pp. 60–61.

Engineers. Moreover, they were convinced that higher-ups had muzzled Gregory. So powerful was their opposition that the committee failed to report the bill to the House. Chairman May sent word to Marshall that he thought it would be necessary for General Somervell to come before the group and make a "strong presentation" in order to break the deadlock.[121] The Chief of Staff apparently saw no merit in this suggestion, for he did not send Somervell to testify. Possibly Marshall believed that the Congressmen had already heard every conceivable argument. Possibly he felt it would be unwise for Somervell to submit himself for questioning; some representative would probably ask what part he had played in the legislative planning, while he was Gregory's assistant.

Two weeks went by during which Patterson and Madigan pondered their next move. No word came from the House committee. On 13 October Chairman May informed the Under Secretary that the leadership was disinclined to press for early passage of the bill.[122] Patterson grew impatient at the delay. In his talks with Congressmen he emphasized that the President was interested in the measure. On the 14th he sent a photostatic copy of the memorandum bearing Roosevelt's handwritten "OK" to the House committee chairman.[123] That day, the committee voted 14 to 5 in favor of the bill. House Majority Leader John W. McCormack still held back. With him, as with the committee members, Patterson stressed the fact that the bill had the President's approval.[124]

The Senate passed the measure on 16 October, but the House was slower to act. Although Majority Leader McCormack was on the whole favorably disposed toward the bill, he feared that Quartermaster officers would suffer discrimination when they came under the Chief of Engineers. Patterson assured McCormack that General Reybold had promised to give "all officers of the Quartermaster Corps now engaged in construction work . . . the same measure of consideration that would have been accorded to them had they been connected with the Corps of Engineers over the past years." Reybold needed these men, Patterson maintained, and would give them every opportunity to serve in positions of responsibility equivalent to or better than the ones they then occupied.[125] McCormack believed that everyone would be better satisfied if an amendment to this effect were added to the bill. As agreed upon by McCormack and Patterson, the amendment stated that all officers on duty with the Construction Division would come under the jurisdiction of the Chief of Engineers "in their present rank and subject to all permanent and temporary advances in rank that may be accorded officers in the Corps of Engineers, without additional examinations of any kind."[126] The amendment gained prompt acceptance. On 21 November the House

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[121] Memo, Lt Col Carlisle V. Allan for Marshall, 1 Oct 41. OCS 16600–88.

[122] Memo, Patterson for Madigan, 13 Oct 41. USW Files, Constr, Transfer, QM–CE.

[123] Ltr, Patterson to May, 14 Oct 41. Same File.

[124] Memo, Patterson for Madigan, 14 Oct 41. Same File.

[125] Ltr, Patterson to McCormack, 21 Oct 41. Same File.

[126] Ltr, Patterson to McCormack, 18 Nov 41. Same File.

passed the measure and on 1 December the President signed it into law.[127]

The long struggle was ended. Happy over the outcome, Patterson congratulated Madigan. Calling the act the "Madigan Bill," the Under Secretary presented him the pen the President had used to sign the measure. "It is appropriate," Patterson said, "that you have this little memento, because it was due to your efforts that this very salutary move has now been consummated."[128] Although the transfer of maintenance caused some misgivings, the Engineers were on the whole well satisfied. The long-sought construction function was theirs.

Consolidation

Somervell took the lead in drafting a plan for the merger. Early in September, shortly after the transfer bill went to Congress, he and Styer framed a proposal for the Chief of Engineers, outlining a scheme for consolidating the two construction agencies. In his preface to this plan Somervell wrote:

> In the reorganization of the Office of the Chief of Engineers and in the consolidation of construction work in the field, which represent the greatest change of activities of the Corps in its entire history, care should be taken not only to take advantage of the best in both the Corps of Engineers and the Quartermaster Corps but to place emphasis on the major task or mission of the new organization. The construction work of the Quartermaster Corps overshadows overwhelmingly the construction work being done by the Corps of Engineers, and military construction both in amount and importance bids fair to continue to be the major effort of the Engineers for several years . . . . Under no circumstances should the less important, slow moving, civil works be permitted to dominate the reorganization for vital, fast-moving and extensive requirements.[129]

Proceeding from these assumptions, he proposed sweeping changes in the Engineer setup. The central office in Washington, which would direct all construction, military and civil, would be organized along the lines of Somervell's own office. Division boundaries would be fluid: for military construction, they would coincide with those of the corps areas; for civil works, they would continue to follow major watersheds. The new organization would have plenty of rank. There would be a deputy Chief of Engineers, a major general; and a brigadier would head each Engineer division.[130] The plan was both general and tentative, for many details were lacking and many problems unsolved.

In taking the initiative, Somervell may have been seeking an answer to questions surrounding his own future. Keenly disappointed over the failure of his bid for the top Engineer post, he began, evidently, to picture himself as deputy chief. Through the fall of 1941 he importuned Madigan to get him a second star, but Madigan was powerless to help.[131] The new Chief's attitude toward Somervell was much the same as Schley's. "A firecracker," Reybold later said, "but ruthless. He didn't care who

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[127] (1) 87 *Cong. Rec.* 9005, 9400. (2) 55 *Stat.* 787.

[128] Ltr, Patterson to Madigan, 3 Dec 41. USW Files, Constr, Transfer, QM–CE.

[129] Memo on Consolidation of Constr Div OQMG with the Corps of Engrs, 12 Sep 41. Opns Br Files, Orgn and Consolidation.

[130] (1) Memo, Somervell for CofEngrs, 8 Sep 41. Madigan Files, Consolidation Bill, Collateral Data. (2) Memo, Styer for Somervell, 10 Sep 41. Opns Br Files, Orgn and Consolidation.

[131] Pagan Interv, 8 Mar 57; Madigan Interv, 18 Jun 56.

he hit."[132] While continuing to hope for a favorable outcome, Somervell retreated into the background, leaving Styer to work out details of the merger with Robins and his group in OCE.

Concerted planning began in mid-October, when the Senate passed the transfer measure. On the 17th, after conferring with OCE, Styer drew up a plan for combining Somervell's Washington office with Robins'. The new Construction Division, OCE, like the old one in OQMG, would have five branches—Engineering, Operations, Contracts and Claims, Real Estate, and Repairs and Utilities. The Fortifications Section, OCE, long a part of the Chief's Military Division, was to be under Operations. Headquarters would be in the Railroad Retirement Building, where Somervell had his office, rather than in the New War Building with the rest of Reybold's staff. By 21 October, when G–4 directed Gregory and Reybold to collaborate on plans for the transfer, Styer's blueprint for reorganizing OCE had already won acceptance.[133]

Combining the two field systems posed a far knottier problem than joining the central offices. The Engineer divisions, unlike the zones, were not coterminous with the corps areas. Only two cities were headquarters for both a corps area and a division. On 21 October, declaring it "essential that effective close liaison be maintained at all times between" the construction agency "and the Corps Area Commander and his staff," Styer proposed that the boundaries and headquarters of nine Engineer divisions be the same as those of the zones. Two divisions, Upper Mississippi Valley and Lower Mississippi Valley, would stay as they were; they would have no part in military construction but would devote themselves exclusively to civil works.[134] This plan ran into strong opposition from the Engineers. Another solution had to be found.

While the new field setup was under discussion, Reybold and Gregory came to an understanding about maintenance and repair. The Chief of Engineers would "operate all plants and installations and perform those functions which, in a city, would be the responsibility of a city manager." The Quartermaster General would continue to have charge of branch depots and to run bakeries, laundries, shoe repair shops, and the like. On 19 November G–4 sent the plan to the Chief of Staff with the recommendation that it go into effect fifteen days after the transfer bill became law. General Marshall concurred.[135]

By mid-November Styer was ready with a new scheme for reorganizing the field. For the time being, there would be no changes in division boundaries and no moving of headquarters. Zone offices at Boston, New York, Baltimore, Chicago, Omaha, and San Francisco would combine with districts in those cities. The zones at Atlanta, Columbus, and San Antonio, where the Engineers had no offices, would become districts

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[132] Reybold Interv, 12 Mar 59.

[133] (1) Memo, Styer for Robins, 17 Oct 41, and Incl. Opns Br Files, Orgn and Consolidation. (2) WD Ltr AG 600.12 (10–20–41) MO–D to TQMG, 21 Oct 41. QM 600.1 (Transfer of Constr Activities from QMC to CE) 1918–41.

[134] Memo, Styer for Robins, 21 Oct 41. Opns Br Files, Orgn and Consolidation.

[135] (1) Ltr, Gregory and Reybold to TAG, 10 Nov 41. 601.1 (QMC) Part 1. (2) Memo, G–4 for CofS, 19 Nov 41. G–4/31324. (3) Memo, Gregory for G–4, 24 Nov 41. QM 601.1 1918–41.

and the Zone Constructing Quartermasters would become district engineers. As yet Styer had proposed nothing controversial; now he proceeded to do so. According to his plan, districts in the same cities as corps area headquarters would deal directly with the Chief's office on maintenance and on all construction coming under corps area commanders. Thus he would create from former zones superdistricts co-equal with Engineer divisions. Forwarding this plan to Robins on 17 November, Styer explained its advantages. First, it would cause little interference with work in progress; second, it would make full use of existing field offices; and third, it would retain essential relations with corps area commanders. Robins sent the plan to the divisions for comment.[136]

Division engineers reacted strongly. From Colonel Hannum at San Francisco came the comment:

> The organization of the Engineer Department in three echelons, the Office of the Chief of Engineers, the Division Engineer, and the District Engineer, is the result of many years' experience; and its suitability for rapid expansion to meet efficiently any temporary or permanent major increase in work has been amply demonstrated, especially so in connection with the Air Corps construction assigned to the Corps in the present calendar year. It is my fixed opinion that this organization and procedure should not be departed from until the necessity therefore is amply demonstrated by experience.
>
> The suggested plan offered by Colonel Styer appears to endeavor to make the field organization of the Engineer Department fit into the present field organization of the OQMG, instead of fitting the work of the latter into the organization and procedure of the Engineer Department.[137]

Writing from Vicksburg, General Tyler complimented Styer on his "careful and exhaustive study" of a "difficult problem," but pronounced the result unsatisfactory. "In my opinion," Tyler warned, "any plan that is dependent upon a compromise between our present decentralized organization and a centralized responsibility will suffer the same fate as has attended previous efforts in that direction." Similarly, Col. John S. Bragdon of the South Atlantic Division complained that Styer's plan did "not make use of the decentralized organization of the Corps of Engineers."[138] Col. C. Lacey Hall of the Ohio River Division had this to say:

> Consolidation with the Corps of Engineers, which it was desired to secure by the new Act, can only be carried out effectively if the Department's tried and true system is exercised on all the work to which it applies. The Division Engineers are supposed to be officers of experience, qualified to take some engineering load off the Department. There should be no construction work within their Division not under their control.

To a man, division engineers opposed letting districts do business directly with the Chief.[139]

At a meeting held by General Robins shortly before the transfer, their conduct was revealing. At General Reybold's request, Groves agreed to present his "views as to how the work should be carried on if transition difficulties were

[136] (1) Memo, Styer for Robins, 17 Nov 41, and Incl thereto. Opns Br Files, Orgn and Consolidation. (2) Ltr, Robins to Tyler, 21 Nov 41. 600.1 (QMC) Part 1.

[137] Ltr, Hannum to Robins, 25 Nov 41. 600.1 (QMC) Part 1.

[138] (1) 1st Ind, 26 Nov 41 on Ltr, Robins to Tyler, 21 Nov 41. (2) Ltr, Bragdon to Robins, 1 Dec 41. Both in 600.1 (QMC) Part 1.

[139] (1) Ltr, Hall to Robins, 29 Nov 41. (2) Replies from other Division Engineers. Both in 600.1 (QMC) Part 1.

to be minimized and if the Engineers were to come out with the reputation that we wanted to come out with." On being introduced by the Chief as "an authority who knew what he was talking about," Groves sensed a sudden chill. There before him was a very senior group. General Tyler, a former Assistant Chief of Engineers, had been president of the Mississippi River Commission and Engineer of the Lower Mississippi Valley Division since 1939. Col. John N. Hodges of the North Atlantic Division had been a temporary brigadier general when Groves was a cadet. And in 1919 Colonel Hannum, then a temporary colonel, had been a member of the board that passed on Groves' promotion to 1st lieutenant. To Groves it appeared that the division engineers thought they "could handle the program very easily, even if the Quartermaster had, as they put it, fallen down." Their attitude, he afterward wrote, "was quite contemptuous of the achievements of the QM. It was also very contemptuous of any ideas and views which I presented. They simply were not mentally prepared for the problems which they were going to face."[140] The reaction of the division engineers to Groves and his reaction to them could not be viewed wholly in terms of a junior instructing his elders. Deep-seated differences of opinion as to organization and methods lay beneath the surface.

The shape of things to come was more clearly discernible, when, on 25 November, Somervell became Assistant Chief of Staff, G–4. He had not sought the post and did not want it. In fact, he considered the appointment a reversal. Mrs. Somervell, reflecting her husband's mood, complained that they were back where they started.[141] The general, in a farewell letter to the Construction Division, expressed deep regret "that this necessitates the severing of the fine and long to be remembered associations . . . with the many loyal individuals . . . who compose this splendid organization."[142] The unwelcome G–4 post would eventually be the springboard to a much more prominent position. Meanwhile, Somervell's departure from the construction scene helped smooth the way to consolidation. Colonel Styer became Acting Constructing Quartermaster General. His term was brief.

With the signing of the transfer bill on 1 December 1941, preparations for the changeover went forward rapidly. Robins directed district engineers to report to divisions on all matters except repairs and utilities and to keep division engineers fully informed of all their activities. Styer told Constructing Quartermasters when and to whom they would report; completed arrangements for transferring funds, property, and records; briefed chiefs of using services on the workings of the Engineers' decentralized organization; and prepared implementing orders.[143] The consolida-

[140] Groves Comments, X, 14–15. See also Hardin Interv, 29 Apr 64.

[141] (1) Tel Conv, McShain and Groves, 23 Dec 41. Opns Br Files, WD Bldg, Arlington. (2) Pagan Interv, 8 Mar 57.

[142] Ltr, Somervell to Members of Constr Div, 25 Nov 41. Opns Br Files, Drafts.

[143] (1) OCE Constr Circ Ltr 202, 9 Dec 41. (2) Telg, Gregory to George, 13 Dec 41. Opns Br Files, Telgs. (3) Ltr, Robins to Tyler, 15 Dec 41. 600.1 (LMVD) Part 1. (4) WD Ltr AG 600.12 (11–10–41) MO–D, 3 Dec 41. EHD Files. (5) WD Circ 248, 4 Dec 41. (6) Memo, Reybold for Wesson, 11 Dec 41. 600.1–614a. (7) Memo, Daley for Leavey, 11 Dec 41. Engrg Br Files, Office Orgn.

tion machinery moved with clocklike precision.

Among the men and women involved, there was considerable uncertainty and heartache. Old loyalties could not be tossed lightly aside. Adjustments were not always easy. There was bitterness on the part of some Quartermaster officers and experienced civilian employees. There was the usual lack of desire to leave an old home for a new one. The situation demanded delicate handling, and it received it. All Regular Quartermaster officers on construction duty had complete freedom of choice as to whether they would remain with construction or go to other duties in the Quartermaster Corps. Regulars with sound background in construction could, if they wished, transfer permanently to the Corps of Engineers. Many fine construction officers—Thomas, Nurse, and Dunstan, among the older men, and Renshaw, Kirkpatrick, and Sciple, among the younger—traded the Quartermaster insignia for the Engineer castle. A number, with brilliant construction records, among them Danielson, Hastings, and Dreyer, did not choose this course. Cognizant of the feelings of the Quartermaster group, the Engineers tried to give every consideration consistent with the country's welfare to the problems of each individual, military or civilian.

On 16 December 1941 the transfer was effective. That day General Reybold, noting that construction had become the first unified command in World War II, remarked:

> Consolidation of the construction functions of the Quartermaster Corps and the Corps of Engineers brings together organizations that are engaged in a 3½ billion dollar defense program, embracing projects in every State, in Alaska, Panama, and Hawaii, and at island bases throughout the Western Hemisphere. This vast program engages the attention of some 600,000 individuals, including contractors' employees. If we were organized as a corporation we should be the world's largest. In fact, this merging of functions involves about the same number of persons as might be affected if the United States Steel Corporation should decide to combine with the Bell Telephone System.

"Obviously," he added, "it will take some time to work out all the details."[144]

Time was pressing. Barely more than a week had passed since the attack on Pearl Harbor.

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[144] Quoted in Lt. Gen. Eugene Reybold, *Engineers in World War II: A Tribute* (Fort Belvoir, Va., 1945), p. 3.